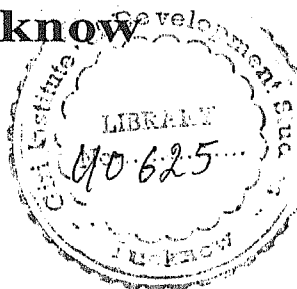


**IMPACT ASSESSMENT STUDY OF ROADS  
CONSTRUCTED UNDER P.M.G.S.Y.  
IN UTTAR PRADESH**

Sponsored by

**Uttar Pradesh Rural Road Development Agency  
(UPRRDA)  
Lucknow**



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Conducted by

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**August 2009**

## PREFACE

The PMGSY scheme was launched by the Central Government in 2000 with the aim of providing all-weather roads access to all unconnected habitations. The scheme lays emphasis on proper planning which would ensure good quality construction as well as cost effectiveness. For this guidelines have been laid down.

The UPRRDA has achieved a high degree of success in a short period of time by completing over 11 thousand road works and the road length constructed is almost 23 thousand kilometres. The cost involved in this has been roughly Rs. 459528 lakh.

On the request of UPRRDA, the Giri Institute of Development Studies, Lucknow undertook an impact assessment study in order to find out whether roads have been constructed as per the specifications as well as assess the direct and indirect benefits which the villages are enjoying as a result of roads constructed under the PMGSY scheme. Benefits are seen in terms of increase in agricultural productivity, overall incomes, improvements in educational and health facilities and such other benefits.

The study highlights the fact although not much time has lapsed since the road construction work has been completed, there is sufficient evidence to prove that people have benefited in every aspect as is evidenced in increased income of households, higher agricultural production, increase in number of vehicles and higher mobility. Reduction in maintenance of vehicles and on fuel consumption and relatively much easier access to educational and health facilities are also evidenced. On the whole quality of road construction is good and people are satisfied with the connectivity provided. The one area which needs to be looked into is to ensure that routine repair and maintenance be carried out as per the conditions laid down. The scheme itself has proved very beneficial and so efforts should be made to overcome the shortcomings in its implementation.

We are thankful to UPRRDA, Lucknow who entrusted the study to us and provided requisite funds for the same. We specially wish to thank Shri Manoj Kumar Singh, IAS, CEO, UPRRDA. Thanks are also due to Shri A.K. Gangwar, Senior Engineer for providing useful insight about the PMGSY scheme and Shri Satish Kumar Shukla, Information Officer, who provided us the secondary information. The team of PIU officials in the four selected districts – Mr. C.B. Pandey (Rae Bareli), Mr. Munshi Lal (Jhansi), Mr. Diwakar (Gorakhpur) and Mr. R.S. Gangwar

(Meerut) also extended their full cooperation to the entire team of workers who conducted the field survey in these districts. We extend our sincere thanks to them.

We thank the project staff comprising Shri B.S. Koranga, Shri K.S. Deoli, Shri S.K. Trivedi, Shri Awadhesh Kumar, Shri Avinash Chandra, Shri Ajay Kumar, Shri Mewa Lal, Shri Rakesh Kumar and Shri Ramesh Chandra Verma who carried out the arduous task of data collection. Data entry work was done by Miss Parul Dikshit, Mrs. Shobha Singh, Miss Lalita Joshi and Miss Farzana Begum. Computer processing of data was ably handled by Dr. Mohammad Tauheed Alam. All of them deserve a special mention for their dedicated service. Last, but not the least, Mr. Manoharan K, deserves to be thanked and complimented for handling the word processing of the draft and final report efficiently despite the fact that he has not been in the best of health.

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August 21, 2009

## CONTENTS

	<i>Preface</i>	i-ii
CHAPTER I	ABOUT THE SCHEME AND THE STUDY	1-18
CHAPTER II	IMPACT OF PMGSY IN RAE BARELI DISTRICT	19-68
CHAPTER III	IMPACT OF PMGSY IN JHANSI DISTRICT	69-115
CHAPTER IV	IMPACT OF PMGSY IN GORAKHPUR DISTRICT	116-163
CHAPTER V	IMPACT OF PMGSY IN MEERUT DISTRICT	164-211
CHAPTER VI	ISSUES AND IMPLEMENTATION OF PMGSY	212-216
CHAPTER VII	ECONOMIC ANALYSIS OF RURAL ROADS UNDER PMGSY	217-225
CHAPTER VIII	SUMMARY AND CONCLUSIONS	226-237
<i>Appendix</i>	Analysis of Variance	238-239

Highways. The scheme clearly specified that PMGSY would cover only rural areas. Even in rural areas PMGSY covers only those rural roads which were formerly classified as 'Other District Roads' (ODR) or Village Roads (VR). The rural roads constructed under PMGSY will be in accordance with the provisions of Indian Roads Congress (IRC) specifications.

The PMGSY was launched by the NDA government. However, when the UPA assumed power at the Centre the priorities were altered. In Phase Two the work of upgradation of Through Routes was to be taken up while habitation with population of 500 and above were to be provided all-weather roads in the Third Phase.

The scheme lays emphasis on proper planning in order to achieve cost effectiveness. The Manual for preparation of roads lays down the various steps involved in the planning process and the role of different agencies such as District Panchayat and State Level Committee have been specified.

Strict norms have been laid down for construction of roads. Normally it is seen that when roads are constructed the pattern followed is to have three layers of stone ballast. However, in the case of PMGSY the procedure is much more scientific. First of all the soil is tested to ascertain the property of soil. The California Bearing Ratio (CBR) is first estimated. Lower CBR indicates weak soil and so the specifications change according to the CBR. In the case of low CBR the road crust has to be kept very thick. The average crust thickness is 25 centimeters but may go up to 35-40 cms. The second aspect which is taken into consideration is the flow of traffic. The flow of traffic passing through is worked out and then the likely traffic flow on the road after ten years of its construction is worked out assuming a given percentage at which traffic is expected to increase on a yearly basis. The life of a road is fixed at 10 years provided routine maintenance is carried out every year and re-painting is done after 5 years. It is for this reason that a five year maintenance provision is built into the contract itself and the contractor is bound to carry out routine maintenance for full 5 years.

The Manual for Preparation of District Rural Roads Plan and Core Network lays down the various steps involved in the planning process and also the role to be played by different agencies such as Intermediate Panchayat, District Panchayat as well as the State level Standing Committee. The Plan is first prepared at the block level according

to the directions laid down in the Manual and the priorities spelt out by the District Panchayat.

The road construction work in the case of Uttar Pradesh is executed either through the Public Works Department (PWD) or the Rural Engineering Services (RES). Some other agencies are also involved such as TCIL and NPCC among Central and UPRNN and UPSBC from among state level agencies. The executing agency has a Programme Implementing Unit (PIU) in a district needed by an officer of the rank of at least an Executive Engineer. In some districts where the roads being constructed under PMGSY is more, the district may even have more than one PIU. The nodal agency at the State level which receives funds from the Centre and co-ordinate the work in the State is the State Rural Roads Development Agency (SRRDA) and at the Centre there is the National Rural Roads Development Agency (NRRDA) which is the apex body and receives the overall funds and clearance from the Ministry of Rural Development.

While preparing the DPR the PIU's will hold consultations with the local community through the Gram Panchayat in order to determine the most suitable alignment, sort out issues related to land availability because under the scheme the villagers have to volunteer their land for road construction, remove any adverse social or environmental impact and elicit the necessary community participation in the programme. The cost of preparing DPR (including investigation, survey and testing) will form part of the project cost. The DPR's are then sent to the State Technical Agency for scrutiny of design and estimates. Once the scrutiny is over the DPR is sent to the SRRDA. The SRRDA will consolidate proposals received from different PIU's and prepare a State Abstract and after SLSC approval the Project Proposals are sent to NRRDA. Once again the proposals will be scrutinized by an Empowered Committee, to be chaired by Secretary, Department of Rural Development before they are finally cleared by the Ministry.

Once proposals have been cleared and Technical Sanction accorded, the Executive Agency would invite tenders. For this too there is a well laid down procedure and only Class A and B registered Contractors are eligible for submitting tenders. Proper specifications have been laid down for a Contractor to become eligible as Class A/B Contractor.

All projects are executed by PIU's and are to be completed within 9-12 months from the date of issue of the work order. To ensure proper supervision and monitoring of roads being constructed under PMGSY there is a three-tier provision. The first-tier is the PIU itself whose primary responsibility is to ensure that all materials used and workmanship are in accordance with the prescribed norms. At the second-tier is the State Quality Monitor (SQM). The SQM consists of senior engineers at least of the rank of Executive Engineer, who have retired from the state itself. The SQM carries out regular inspection and sends its report to the SRRDA. Finally at the third-tier is the NQM or the National Quality Monitors who too will inspect the roads and submit their reports to the NRRDA.

In case the work inspected by SQM or NQM is not satisfactory the PIU will ensure that the Contractor replaces the materials or rectifies the workmanship within the stipulated time.

As far as the flow of funds is concerned, the SRRDA opens an account in a Public Sector Bank in the State Headquarters. The account number is communicated to NRRDA and Ministry of Rural Development. The Ministry then releases programme funds as well as administrative and travel expenses to this account. The State Government adds to it its own funds to meet works related expenses not found eligible for funding by the Ministry, to meet cost escalation, tender premium and other programme expenses.

## **2. About the Study and Its Objectives**

Since the inception of the programme over 20 thousand kilometers of roads have been constructed in the State and close to ten thousand inhabitations have been provided connectivity through an all weather road. The Uttar Pradesh Rural Road Development Agency (UPRRDA), which coordinates the PMGSY scheme in the various districts of the State wanted to get an impact assessment study done of the Prime Ministry Gram Sadak Yojana in order to assess the benefits which have been derived from it. The Giri Institute of Development Studies, Lucknow, was assigned the task of conducting the study in some selected districts of the State on behalf of the UPRRDA.

## Objectives of the Study

The main objectives of the study are as follows:

- (a) To find out whether or not the roads were constructed in a systematic and cost effective manner in tune with the guidelines provided in the Manual for the Preparation of District Rural Roads Plan;
- (b) To enquire whether the priorities indicated by different concerned agencies/ individuals such as the Panchayat, MLA or MP etc. were duly consulted in the planning process;
- (c) To ascertain whether the annual maintenance contracts were entered into at the time of granting the construction contract and whether or not maintenance of roads is being done efficiently on a regular basis;
- (d) To find out whether funds for maintenance are being regularly deposited in the maintenance account of the NRRDA;
- (e) To assess the direct benefits/impact of rural roads by way of increased agricultural production and marketable surplus, increase in levels of income and expenditure, decrease in cost of transportation and savings in travel time; and,
- (f) To assess the indirect impact of rural roads as observed in improvement in education and health, banking facilities, and increased income and employment opportunities both within and outside the village.
- (g) To work out the Economic Rate of Return of rural roads under PMGSY in the study area.

## 3. Research Design, Sample Size and Methodology

The study is based on a primary survey in four districts of U.P. As the state is divided into four regions it was decided to select one district from each region of the State. The selection of districts was done with the help of officials of the SRRDA, Lucknow. The districts thus selected were as follows:

- |                |                    |
|----------------|--------------------|
| (a) Rae Bareli | Central Region     |
| (b) Gorakhpur  | Eastern Region     |
| (c) Meerut     | Western Region     |
| (d) Jhansi     | Bundelkhand Region |

It was proposed to select two blocks from each district. One block would be the relatively better developed one while the second will be from among the lesser developed ones. From each block four villages were to be identified for the survey with the help of officials of the PIUs. Two of these villages were to be those where roads under PMGSY were constructed during 2002-03, while the other two villages would be those where roads were constructed between 2004-06. This was done with the assumption that in case of villages with a relatively older road under PMGSY would have had a higher impact on the overall condition of the village as compared to a village where relatively lesser time had lapsed since road construction. Villages where roads were constructed after 2006 would obviously be those where the impact would not be very visible and so all such villages were not to be selected. In all, therefore, eight villages were to be selected from each district having PMGSY roads. Besides the sample villages with PMGSY road it was also decided to select one village from each block which is not connected with an all weather road constructed under the PMGSY scheme. The control villages will serve as the basis of comparison with the selected villages. Another aspect which was to be considered was the length of the road constructed under PMGSY scheme. It was felt that if the road was very small then too its impact on the rural economy would not be very high. It was, therefore, decided to select roads with a minimum length of at least 1.75 kms or more.

When we actually visited the selected villages and spoke to the officials from the respective PIUs in connection with block and village selection it was realized that we could not confine our selection to only two blocks. We, therefore, had to select roads from more than two blocks in each district. For example, the eight sample villages of Rae Bareilly were selected from 6 blocks and we had to visit a seventh block for one of our control villages. The least number of blocks were in Jhansi where we could get our 10 villages from 4 blocks.

From each village we selected 30 households for a detailed household survey. For household selection a house listing of the villages was carried out and then households were selected on the basis of farming and non-farming households. Farming households were those whose primary occupation was agriculture. 20 households were taken from this group and even among them we selected households from three different

land holding categories, viz., households with less than 2.5 acres, those with 2.5 to 5.0 acres and households having land holding in excess of 5.0 acres. The remaining 10 households were those whose primary occupation was not agriculture even though they might have possessed some land. Even from the control villages 30 households using the same criterion were selected. Thus we covered a total of 300 households from each district. Our total sample therefore worked out to be:

(a)	Total Districts	4
(b)	Total Blocks Covered	24
(c)	Villages with PMGSY roads	32
(d)	Control Villages	8
(e)	Households from Sample villages	960
(f)	Households from Control Villages	240

For the primary survey we developed two sets of questionnaires. One was to obtain information about the village and the other about the households. The village survey questionnaire was designed to collect information about the village regarding population, distance from the market, facilities available such as education, health, etc., condition of access roads, crops produced and consumption, travel pattern and ownership of vehicles and commercial activities of the village.

Similarly, the aim of the household questionnaire was to collect detailed information about the demographic picture of the households, their access to education and health, annual income and expenditure levels, ownership of vehicles and their traveling habits, agricultural production and consumption and possession of various assets.

The questionnaires were developed for both selected and control villages so that a comparative analysis could be done between the two to ascertain the advantages which people are enjoying as a result of all-weather road connectivity in villages where roads under PMGSY have been constructed as against those villages which do not have such a road connectivity.

The information collected from survey of households of the selected villages was obtained in such a way so that the situation prior to and after construction of road under PMGSY could be assessed. This was desirable to analyze the gains of the village as a result of road construction.

The quality of the road was judged by the condition of road as observed during the field survey and from the views of the respondents. Details about the flow of traffic were also estimated by observing the different types of vehicles passing through the village road during a day.

Besides the household survey group discussions were held with villagers to obtain their views regarding the quality of road and its impact on the lives of people and in the overall development of the villages.

Discussions were also held in the respective PIUs with the officials to find out the various problems, if any, which they might have faced during the execution of the programmes under PMGSY.

Besides the primary information we have also collected secondary information from the UPRRDA office, Lucknow and the PIUs of our selected districts.

#### **4. Progress of PMGSY in Uttar Pradesh and Our Selected Districts**

As has already been mentioned earlier the PMGSY scheme was launched in December 2000 and since then work has been carried out on a phase wise basis. Table I.1 highlights the progress of the work carried out in the State as a whole. During the first phase new connectivity was provided to 3136 habitations and upgradation work was carried out on 1911 roads. In all therefore 5047 roads were constructed during the very first phase and total length of roads worked out to 8212.79 kms and the total value of road works was to the tune of Rs.31500 lakhs. By 31 December 2008 new connectivity had been provided to 11012 habitations and the road length covered was over 20 thousand kilometers. The total value of road works stood at Rs.410961 lakhs. If we take the cumulative figures of all the work undertaken including upgradation work then the corresponding figures of road works completed is 11784 and the road length and value of roads is 22852 kms and Rs.459528 lakh respectively. It is, therefore, very obvious that substantial progress has been made under the PMGSY scheme since the time of its inception. Over eleven thousand habitations now enjoy the benefit of having all-weather road connectivity and this is clearly indicative of the magnitude of work which has been accomplished in about eight years by the UPRRDA.

As far as our four selected districts are concerned the progress of work done in each on a phase-wise basis are presented in Tables I.2 to I.10. As far as Phase I is concerned all the districts achieved full success in the construction of new roads as well as upgradation work. However, from Phase II onwards not all districts could achieve 100 per cent success. On the whole, a comparison of the districts reveals that the success achieved in Jhansi and Meerut over the different phases was relatively better as compared to Gorakhpur and Rae Bareli.

So far an effort has been made to present in brief information about the PMGSY scheme, the objectives of the study and the methodology and sample size covered during the survey of our selected districts. We have also provided secondary information regarding the progress of scheme in the state as a whole and in our selected districts. The villages which were selected from each district for the field survey are being listed below:

District	Name of Village/Habitation	Block
<b>1. Rae Bareli</b>		
(a) Selected Villages	1. Gohanna 2. Kotwa Madania 3. Devpuri 4. Pastaur 5. Sabzi 6. Jagdishpur 7. Pilkha 8. Tera	Amawan Maharajganj Bachrawan Bachrawan Bachrawan Shivgarh Dalmau Harchandpur
(b) Control Villages	1. Sikandar Khera 2. Deranpur	Bachrawan Dinshaw Gaura
<b>2. Meerut</b>		
(a) Selected Villages	1. Bhola 2. Bhamauri 3. Manpuri 4. Alamgiripur 5. Meerpur 6. Bahrapur Morana 7. Nagala Kaboolpur 8. Raihghara	Rohta Sarghana Sarghana Sarghana Jani Khurd Jani Khurd Kharkhauna Machara
(b) Control Villages	1. Fitkari 2. Chindauri Tappa	Mawana Daurala

<b>3. Jhansi</b>		
(a) Selected Villages	1. Tilhauta 2. Dimrauni 3. Bachhauni 4. Punauli Khurd 5. Ganghauri 6. Kottora 7. Shahpura 8. Gorpura	Baragaon Baragaopn Babina Babina Bangara Gauri Sarai Gauri Sarai Gauri Sarai
(b) Control Villages	1. Bugwari 2. Sajera	Bangara Bangara
<b>4. Gorakhpur</b>		
(a) Selected Villages	1. Chabela 2. Bhaksa 3. Pakadidar 4. Silhata Mundeve 5. Sihorwa 6. Gadania 7. Bheusa 8. Lonia	Sardar Nagar Brahmpur Brahmpur Brahmpur Brahmpur Khajani Khajani Pali
(b) Control Villages	1. Semara 2. Sihwala Tola	Chirgaon Jugle Kaudia

P.S. : Selected villages are those where all-weather roads have been constructed under the PMGSY scheme.

In the next four chapters an attempt will be made to analyze the data obtained from the field survey of our selected districts so that we may be in a position to highlight the impact which roads constructed under PMGSY have had as a sequence of all-weather road connectivity in them. A separate chapter will be allocated to each of our selected districts. The sixth and final chapter will highlight the main findings of the study and offer some suggestions based on our findings which could assist in making the programme more efficient.

**Statement showing Physical & Financial progress under PMGSY**  
Format IIB

Name of State: Uttar Pradesh		(Length in Km. Amount in Rs. Lakh)											
Reporting Month & Year: Upto March 2009		Phase I	Phase II	Phase III	Phase III (N.B.)	Phase IV	Phase V	Phase V WB	Phase VI	Phase VI WB	Phase VII	Total	
Physical and Financial Progress	Total value of proposals cleared by G.O.I.	31500.00	59476.00	66720.00	107658.00	201345.00	27631.00	203681.00	14715.00	282177.81	1021796.81		
	Amount released by G.O.I.	31500.00	59476.00	65720.00	102558.00	201345.00	27631.00	203681.00	14715.00	282177.81	1021796.81		
	Details of road works cleared by S.T.A.												
	No. of road works	3136	1488	1437	514	2114	438	81	0	170	11096		
	Length of road works	3240.56	3757.64	3767.81	1270.00	3834.42	3030.99	167.75	0.00	332.19	20303.22		
	Value of road works (including Upgrading upto phase-3 WB)	31500.00	59476.00	66720.00	95633.00	86102.00	26891.00	5479.00	0.00	12891.00	417205.00		
	No. of Habitations benefited	2039	1332	1625	1319	1010	79	2	7406				
	999-500	308	134	233	1068	1288	1	0	3628				
	499-250*	138	5	114	204	147	1	0	9	618			
	Incidentally	0	131	0	20	244	0	0	31	496			
Physical and Financial Progress	Upgradation												
	No. of road works	1911	68	188	216	603	3	693	43	1140	4865		
	Length of road works	3005.37	106.45	330.52	396.27	4119.62	41.30	5782.79	413.88	7679.07	21875.27		
	Value of road works												
	No. of road works completed												
	Length of road works completed												
	Expenditure												
	No. of Habitations >1000	3	8	31	151	55	6	0	0	1	255		
	999-500	3000	310.00	47.49	430.06	74.64	13.53	0.00	0.00	4.23	598.67		
	499-250*	7	0	0	0	0	0	0	0	0	87		
Physical and Financial Progress	Upgradation												
	% physical progress												
	Length of road works completed												
	Expenditure												
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	Length of road works completed												
	Expenditure												
	No. of Habitations >1000												
	999-500												
	499-250*												

Table I.2: Progress of PMGSY Works Sanctioned During 2000-2001 (Selected Districts)

Name of State : Uttar Pradesh

Reporting as on Dec, 2008

Name of Department: U.P.R.R.D.A.

Name of Department: U.P.R.R.D.A.										Length(in Km) & Amount (in Lakh)									
Sl No.	District	Road Works Sanctioned					Amount as Cleared by GOI	Estimated Cost after STA Scrutiny	Tendered Cost	Progress of Road								Expenditure	Remarks if any
		New Connectivity	Upgradation							Completed Works				On Going Works					
			Nos.	Length	Nos.	Length				New Connectivity	Upgradation		New Connectivity	Upgradation					
											Nos.	Length		Nos.	Length	Nos.	Length		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1	Gorakhpur	55	53.04	57	58.90	973.96	0.00	975.10	55	53.04	57	58.90	0	0.00	0	0.00	975.10	0	
2	Jhansi	23	67.50	0	0.00	210.44	0.00	210.44	23	67.50	0	0.00	0	0.00	0	0.00	210.44	0	
3	Meerut	86	99.85	19	24.47	566.44	0.00	566.44	86	99.85	19	24.47	0	0.00	0	0.00	566.44	0	
4	Rae Bareli	53	111.46	0	0.00	553.15	0.00	553.15	53	111.46	0	0.00	0	0.00	0	0.00	553.15	0	
Total		217	331.85	76	83.37	2303.99	0.00	2305.13	217	331.85	76	83.37	0	0.00	0	0.00	2305.13	0	

Source: U.P.R.R.D.A.

Source: U.P.R.R.D.A.

Table I.3: Progress of PMGSY Sanctioned during Phase-II (for the year 2001-02) (Selected Districts)

Name of State : Uttar Pradesh Reporting as on Dec 2008										Length in KM & amount in Rs. Lakh													Format-PW-2	
Sl No.	District	Road Works Sanctioned by G.O.I.				Amount as Cleared by GOI in lakh	Estimated No. & Cost after STA Scrutiny Technical sanction		Tendered Cost in lakh	Progress of Road										% Physical Progress	Expenditure	No. of Works to be deleted W.R.to STA		
		New Connectivity		Upgrad- ation			No.	Cost in Lakh		Completed Works				On Going Works										
		Nos.	Length	Nos.	Length					Upgradation		New Connectivity		Nos.	Length									
										Nos.	Length	Nos.	Length											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				
1	Gorakhpur	34	48.87	0	0.00	1198.50	34	1170.13	885.17	22	32.14	0	0.00	0	0.00	0	0.00	100.00	785.55	12				
2	Jhansi	8	10.93	0	0.00	613.34	8	371.73	346.00	8	10.93	0	0.00	0	0.00	0	0.00	100.00	313.76	0				
3	Meerut	14	18.98	0	0.00	400.32	14	400.32	387.11	14	18.98	0	0.00	0	0.00	0	0.00	100.00	374.48	0				
4	Rae Bareli	31	55.16	0	0.00	1237.28	31	966.07	894.72	22	40.75	0	0.00	0	0.00	0	0.00	100.00	856.21	9				
Total		87	133.93	0	0.00	3449.44	87	2908.25	2513.00	66	102.79	0	0.00	0	0.00	0	0.00	400	2330.00	21				
Special Packages (PWD)																								
1	Rae Bareli	6	18.00	0	0.00	403.56	6	335.06	189.43	4	9.20	0	0.00	0	0.00	0	0.00	100.00	161.90	2				
Total Sp. Packages		6	18.00	0	0.00	403.56	6	335.06	189.43	4	9.20	0	0.00	0	0.00	0	0.00	100.00	161.90	2				
Grand Total		93	151.93	0	0.00	3853.00	93	3243.31	2702.43	70	111.99	0	0.00	0	0.00	0	0.00	500.00	2491.90	23				
Source: U.P.R.R.D.A.																								

Source: U.P.R.R.D.A.

**Phase-III**  
**Format-PW-3**

**Table I.4: Progress of PMGSY Sanctioned during Phase-III (for the year 2003-04) (Selected Districts)**

Name of State : Uttar Pradesh  
Reporting as on Dec 2008

Length in KM & amount in Rs. Lakh

Sl No.	District	Road Works Sanctioned				Amount as Cleared by GOI in lakh	Estimated No. & Cost after STA Scrutiny Technical sanction		Tendered Cost (With Maintenance)	Progress of Road								% Physical Progress (After deletion)	Expenditure	No. of Works to be deleted W.R. to STA
		New Connectivity		Upgradation			No.	Cost in Lakh		Completed Works				On Going Works						
		Nos.	Length	Nos.	Length					New Connectivity		Upgradation		New Connectivity		Upgradation				
										Nos.	Length	Nos.	Length	Nos.	Length	Nos.	Length			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Gorakhpur	33	64.17	0	0.00	2139.79	33	2139.79	2057.35	31	60.62	0	0.00	0	0.00	0	0.00	100.00	2121.07	2
2	Jhansi	14	40.78	0	0.00	763.85	14	763.85	674.68	14	40.20	0	0.00	0	0.00	0	0.00	100.00	717.02	0
3	Meerut	0	0.00	35	60.61	986.67	35	986.67	959.45	0	0.00	34	58.91	0	0.00	0	0.00	98.45	887.79	0
4	Rae Bareli	21	30.90	0	0.00	537.64	21	537.64	577.93	21	30.58	0	0.00	0	0.00	0	0.00	100.00	547.50	0
Grand Total		68	135.85	35	60.61	4427.95	103	4427.95	4269.41	66	131.40	34	58.91	0	0.00	0	0.00	398.45	4273.38	2

Source: U.P.R.R.D.A.

**Table I.5: Progress of PMGSY Sanctioned during Phase-III (for the year 2003-04)**

Name of State : Uttar Pradesh  
Reporting as on Dec 2008

Length in KM & amount in Rs. Lakh

Sl No.	District	Road Works Sanctioned				Amount as Cleared by GOI in lakh	Estimated No. & Cost after STA Scrutiny Technical sanction		Tendered Cost (With Maintenance)	Progress of Road								% Physical Progress	Expenditure	No. of Works to be deleted W/R to STA		
		New Connectivity		Upgradation			No.	Cost in Lakh		Completed Works				On Going Works								
		Nos.	Length	Nos.	Length					New Connectivity	Upgradation		New Connectivity		Upgradation Length							
											Nos.	Length	Nos.	Length		Nos.	Length					
1	2	3	4	5	6	7	8	9	10		11	12	13	14	15	16	17	18	19	20	21	
1	Rae Bareli	17	46.10	0	0.00	1197.98	17	1197.98	1182.12	17	43.25	0	0.00	0	0.00	0	0.00	0	0.00	99.56	1055.11	0

Source: U.P.R.R.D.A.

P.S.: World Bank Scheme was operative only in Rae Bareilly

Table I.6: Progress of PMGSY Sanctioned during Phase-IV (for the year 2004-05) (Selected Districts)

Name of State : Uttar Pradesh  
Reporting as on Dec 08

PW-4  
Length in KM & amount in Rs. Lakh

Sl No.	District	Road Works Sanctioned			Amount as Cleared by GOI in lakh	Estimated No. & Cost after STA Scrutiny Technical sanction		Tendered Cost (Without Maintenance)	Progress of Road								% Physical Progress	Expenditure	No. of Works to be deleted W/R, to STA	
		New Connectivity	Upgradation			Completed Works	On Going Works													
			Nos.	Length			Nos.		Length	New Connectivity	Upgradation									
											Nos.	Length	Nos.	Length						
															Nos.	Length				Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Gorakhpur	45	55.84	0	0.00	1615.93	45	1615.93	1317.56	37	42.83	0	0.00	1	2.65	0	0.00	94.17	1199.73	7
2	Jhansi	29	61.95	0	0.00	1554.55	29	1554.55	1203.72	27	49.19	0	0.00	0	4.94	0	0.00	90.88	982.35	2
3	Meerut	0	0.00	20	34.57	638.44	20	638.44	651.20	0	33.38	20	33.38	0	0.00	0	0.00	100.00	615.23	0
4	Rae Bareilly	21	53.66	0	0.00	1328.77	21	1328.77	1089.80	19	44.37	0	0.00	0	0.10	0	0.00	99.87	1061.46	2
Grand Total		95	171.45	20	34.57	5137.69	115	5137.69	4262.28	83	169.76	20	33.38	1	7.69	0	0	384.92	3858.77	11

Source: U.P.R.R.D.A.

Table I.7: Progress of PMGSY Sanctioned during Phase-V (for the year 2005-06) (Selected Districts)

Phase-V

Name of State : Uttar Pradesh  
Reporting as on Dec 08

Format-PW-5

Length in KM &amp; amount in Rs. Lakh

Sl No.	District	Road Works Sanctioned					Amount as Cleared by GOI in lakh	Estimated No. & Cost after STA Scrutiny Technical sanction		Tendered Cost (Without Maintenance)	Progress of Road										% Physical Progress	Expenditure	No. of Works to be deleted W,R,t o STA				
		New Connectivity		Upgradation				No.	Cost in Lakh		Completed Works				On Going Works												
		Nos.	Length	Nos.	Length	Nos.					Length	Nos.	Length	Nos.	Length	Nos.	Length										
																		New Connectivity	Upgradation					New Connectivity		Upgradation	
																			Nos.	Length				Nos.	Length	Nos.	Length
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21							
1	Gorakhpur	6	14.90	46	169.41	6705.05	52	6705.05	6198.25	4	8.15	18	33.08	0	0.00	25	132.33	23.98	4013.27	6							
2	Jhansi	22	45.98	8	59.55	3548.87	30	3548.87	3315.72	21	40.86	4	28.57	1	5.12	4	30.98	65.79	2665.84	0							
3	Meerut	0	0.00	33	106.51	2541.48	33	2541.48	2523.02	0	0.00	32	102.70	0	0.00	1	0.53	99.37	2272.24	0							
4	Rae Bareli	22	59.37	6	49.29	3012.00	28	3012.00	2212.03	8	21.31	2	6.00	8	5.55	4	43.29	67.68	1090.18	6							
Grand Total		50	120.25	93	384.75	15807.40	143	15807.40	14249.02	33	70.315	56	170.35	9	10.663	34	207.12	256.817	10041.53	12							

Source: U.P.R.R.D.A.

**Name of State : Uttar Pradesh**  
**Reporting as on Dec 08**

**Length in KM & amount in Rs. Lakh**

Source: U.P.R.R.D.A.

**P.S.: World Bank Scheme was operative only in Rae Bareilly**

**Name of State : Uttar Pradesh**  
**Reporting as on Dec 08**

**Format-PW-6**  
**Length in KM & amount in Rs. Lakh**

Source: U.P.R.R.D.A.

Table I.10: Progress of PMGSY Sanctioned during Phase-VII (for the year 2007-08) (Selected District)

Name of State : Uttar Pradesh  
Reporting as on Dec 08

Phase-VII  
Format-PW-7

Reporting as on Dec 08										Length in KM & amount in Rs. Lakh										
Sl No.	District	Road Works Sanctioned				Amount as Cleared by GOI in lakh	Estimated No. & Cost after STA Scrutiny Technical sanction		Tendered Cost (Without Maintenance)	Progress of Road								% Physical Progress	Expenditure	No. of Works to be deleted W,R, to STA
		New Connectivity		Upgradation			Completed Works				On Going Works									
		Nos.	Length h	Nos.	Length h		New Connectivity	Upgradation		New Connectivity		Upgradation								
								Nos.		Length	Nos.	Length	Nos.	Length	Nos.	Length				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Gorakhpur	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0
2	Jhansi	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0
3	Meerut	0	0.00	23	66.31	1742.53	23	1742.53	1722.94	0	0.00	0	0.00	0	0.00	23	66.07	25.69	249.34	0
4	Rae Bareli	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0
Grand Total		0	0.00	23	66.31	1742.53	23	1742.53	1722.94	0	0.00	0	0.00	0	0.00	23.00	66.07	25.69	249.34	0

Source: U.P.R.R.D.A.

## CHAPTER II

### IMPACT OF PMGSY IN RAE BARELI DISTRICT

#### A. GENERAL INFORMATION ABOUT THE VILLAGES

In this chapter an effort is being made to analyze the impact of the roads constructed under PMGSY of our selected districts. For the purpose of our analysis we have collected primary information from each of the eight selected villages as well as from 30 households from each village. Besides this we also identified two control villages which do not have an all-weather road in order to assess the extent to which the villages with all weather roads enjoy an advantage over those which do not enjoy the advantage of an all weather road.. We will first take up our selected villages and then the control villages for our analysis and then present the overall findings of the survey. A similar pattern of the analysis will be repeated in the other three chapters where the impact will be studied for the remaining districts.

The information related to the name of village, length of the road, cost of construction, year of initiation as well as of completion, are provided in Table 2.1 for our selected districts. It is clear from the table that we have ensured that the roads are so selected that some roads were started in the earlier phases while the others are relatively new. However we have tried not to take the latest roads as it was felt that the impact can hardly be felt in a short duration. Moreover, we have also left out roads which were less than 1.75 kms Here again the rationale behind selection was that a very small road of say below 1 or 1.5 kms will also not have the same impact on the village as compared to one which is say at least around 2kms long. Therefore, in our effort to draw the appropriate sample we had to cover as many as six blocks of the district.

**Table 2.1: Sample Villages of Rae Bareli (Details of PMGSY Roads)**

Village	Block	Length of Road (Kms)	Cost of Construction (Rs. Lakhs)	Year of Initiation	Year of Completion	Quality of Road (Giri Institute Observation)
Gohanna	Amawan	3.10	56.40	16.8.02	2.10.03	Very Poor Condition
Kotwa madaniya	Maharajganj	2.65	54.00	2003	2004	Good Quality and Good Condition
Devpuri	Bachrawan	1.85	34.96	16.8.03	2005	Good Quality and Good Condition
Pilkha	Dalmau	2.45	46.84	7.2.03	6.2.06	Very Poor Condition
Jagdishpur	Shivgarh	2.60	69.11	2004	2005	Good Quality and Good Condition
Pastaur	Bachrawan	2.90	77.92	2.6.05	1.7.06	Roads Good Quality but Culverts not maintained Properly
Tera	Bachrawan	3.95	85.55	2.7.05	1.6.06	Very Poor Condition
Sabzi	Harchandpur	2.80	60.65	18.2.06	17.2.07	Quality is Good Condition Satisfactory

Note: In Rae Bareli no maintenance work has been done.

Control Villages: (i) Sikandar Khera (Bachrawan Block). Road connectivity approximately 5 kms is required. Road is proposed under PMGSY.

(ii) Dherampur (Dinshaw Gaura). Road connectivity approximately 5 kms is required. Road is proposed under PMGSY.

At the end of the table are the names of the control villages, which were selected for bringing about a comparison between villages, having all-weather connectivity and those not so fortunate.

### (i) Brief Profile of our selected villages

Table 2.2 provides detailed information about total households, population and male and female literacy levels in the selected districts. The population of these villages ranged between 1842 to 3655. In six villages the average size of the household was between 5.0 to 5.38. The maximum size of the household was in Kotwa Madania (8.80) In the other two it was around 6.1 persons.

Table 2.2: Details about Village/Habitation

Details	Sabzi	Pastaur	Devpuri	Tera	Kotwa madaniya	Jagdishpur	Gohanna	Pilkha
Total Households	412	465	455	640	415	301	457	465
Total Population	2100	2496	2450	3300	3655	1842	2795	2325
Male	1100	1367	1247	1690	1895	989	1605	1327
Female	1000	1129	1203	1610	1760	853	1190	998
Literacy (%)								
Male	49.00	39.00	53.00	40.00	48.00	45.00	40.00	45.00
Female	26.00	22.00	31.00	28.00	36.00	35.00	20.00	26.00
Avg. Size of HH	5.09	5.37	5.38	5.16	8.80	6.12	6.11	5.00

Similarly Table 2.3 provides details of cultivated land as well as various source of irrigation. The table highlights the fact that there is a wide variation between villages between the total land holdings of the people and the net area sown. In four out of our eight villages this percentage is above 90 percent with Gohanna leading the list with 99.49 percent and is closely followed by Jagdishpur (98.42 percent). As against this the lowest area cultivated was in Patam (61 percent). The net irrigated area was very high in all our villages except Tera where of around half the net sown area is irrigated. This is so, because, despite the fact that large number of borings have been made by private individuals, most have them do not have pumps to lift water for irrigation. In all the villages private tubewells are the main source of irrigation. Only three villages had government tubewells. Even canal irrigation was not developed adequately.

Table 2.3: Details of Cultivated Land

Details	Sabzi	Pastaur	Devpuri	Tera	Kotwa madaniya	Jagdishpur	Gohanna	Pilkha
Total Area (acre)	510	1385	1200	595	906	1011	4350	487.85
Net Sown Area (acres)*	460 (90.19)	847.5 (61.19)	800 (66.67)	398 (66.89)	821 (90.62)	995 (98.42)	4328 (99.49)	358.98 (73.58)
Net Irrigated Area (Acres)**	460 (100.00)	847.5 (100.00)	800 (100.00)	202 (50.75)	821 (100.00)	961 (98.58)	4308 (99.53)	304.13 (84.77)
Source of Irrigation								
Private Tubewells (Nos)	72	108	25	90	37	50	150	85
Govt. Tubewells (Nos)	0	4	0	2	0	0	0	4
Canal (kms)	12	15	5.5	3	2	2.4	0	0

\* Figure in brackets indicate the percentage of net area sown to total area

\*\* Figure in brackets indicate the percentage of net irrigated area to net area sown

Distribution of workers according to different categories highlights the fact that vast majorities are either cultivation agricultural labourers or in the animal husbandry sector. These three categories taken to account for almost 97 percent of the total workers in Tera village. The lowest share of around 83 percent was found in Jagdishpur (For details please see table 2.4).

**Table 2.4: Category Wise Distribution of Workers (% Share)**

Category	Present Situation							
	Sabzi	Pastaur	Devpuri	Tera	Kotwa madaniya	Jagdishpur	Gohanna	Pilkha
Cultivators	63.70	66.21	63.46	68.18	65.79	68.31	65.16	65.00
Agricultural Labour	14.01	15.94	18.33	17.12	20.00	10.33	13.02	16.88
Animal Husbandry	15.53	12.01	7.75	12.00	11.46	5.18	7.07	4.34
Small Industry	0.20	0.86	0.00	0.00	0.00	2.05	1.60	1.96
Other Industries	0.00	0.31	0.00	0.00	0.00	0.47	0.00	0.00
Construction	2.25	4.11	5.63	0.83	1.21	3.81	1.10	6.17
Business	2.39	0.56	1.71	0.76	0.83	3.01	4.83	0.86
Transport and Communication	1.12	0.46	0.00	1.11	0.71	1.86	3.31	0.67
Others	0.80	0.00	3.12	0.00	0.00	4.98	3.91	4.12
Total	100.00	100.46	100.00	100.00	100.00	100.00	100.00	100.00

The only new facilities to have come up in these villages as a result of road construction are primary schools in Kotwa Madania and Gohanna and Private Clinics in Sabzi, Devpuri and Kotwa Madania.

If we look at the changes in commercial activities in these villages it is observed that in the period following the construction of all weather road under PMGSY the villages are witnessing some improvement. This can be witnessed particularly in the increasing number of general merchants shops, more persons starting cycle and scooter repair work, increase in tailoring activity and some other enterprises, such as barbers shop, beedi and cigarette selling, PCO, flour mill etc.. It is not that major change has been witnessed but considering the fact that of few years have been passed since the roads have been constructed the improvement is clearly indicative of the fact that a positive step forward has been taken in the process of overall development of the village. Activity wise details of each village before and after construction of the road have been highlighted with the help of Table 2.5

**Table 2.5: Details of Commercial Activities Before and After PMGSY**

Details	Before PMGSY							
	Sabzi	Pastaur	Devpuri	Tera	Kotwa madaniya	Jagdishpur	Gohanna	Pilkha
Tea Shop	1	1	0	2	0	2	0	0
Sweet Shop	1	0	0	0	1	0	0	2
General Shop	3	13	6	4	11	8	6	15
Cycle Repair Shop	1	4	0	1	2	0	1	3
Scooter/Motor Cycle Repair Shop	1	0	0	0	0	0	0	1
Jeep/Car/Tractor repair Shop	0	0	0	0	0	0	0	0

Table 2.5 (contd...)

Agricultural Implements Shop	0	0	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	0	0	2	0	0	0
Electronic Shop	0	0	0	0	0	0	0	0
TV/Radio Repair Shop	0	0	0	0	0	0	0	0
Tailor	2	2	2	0	1	6	1	4
Industrial enterprises	0	0	2	0	0	0	0	0
Others	0	3	0	2	4	3	10	2
After PMGSY								
	Sabzi	Pastaur	Devpuri	Tera	Kotwa madaniya	Jagdishpur	Gohanna	Pilkha
Tea Shop	1	1	0	4	2	2	1	2
Sweet Shop	1	0	0	0	1	0	0	0
General Shop	4	27	10	4	13	21	10	21
Cycle Repair Shop	4	5	1	1	2	1	1	4
Scooter/Motor Cycle Repair Shop	4	0	0	0	0	1	0	1
Jeep/Car/Tractor repair Shop	0	0	0	0	0	1	0	0
Agricultural Implements Shop	0	0	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	1	0	2	0	0	0
Electronic Shop	0	0	0	0	0	0	0	0
TV/Radio Repair Shop	0	0	1	0	0	0	0	0
Tailor	4	4	3	1	1	3	3	5
Industrial enterprises	0	0	2	0	0	2	0	0
Others	3	13	1	7	5	4	22	2
Change								
Tea Shop	0	0	0	2	2	0	1	2
Sweet Shop	0	0	0	0	0	0	0	-2
General Shop	1	14	4	0	2	13	4	6
Cycle Repair Shop	3	1	1	0	0	1	0	1
Scooter/Motor Cycle Repair Shop	3	0	0	0	0	1	0	0
Jeep/Car/Tractor repair Shop	0	0	0	0	0	1	0	0
Agricultural Implements Shop	0	0	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	1	0	0	0	0	0
Electronic Shop	0	0	0	0	0	0	0	0
TV/Radio Repair Shop	0	0	1	0	0	0	0	0
Tailor	2	2	1	1	0	-3	2	1
Industrial enterprises	0	0	0	0	0	2	0	0
Others	3	10	1	5	1	1	12	0

The area in which the villages definitely have shown signs of improvement is in the terms of increase in the number of privately owned vehicles. In almost each category of vehicle we observed atleast some increase. The main increase is in the numbers of privately owned cycles and scooters or motorcycles (Table 2.6). This is quite understandable because the cost of both types of vehicles is relatively low as compared to a jeep car or a tractor etc. Not only that even their maintenance too is a costly proposition. However, although there has been an increase in the privately owned means of transportation there is hardly much change in the public means of transport such as buses or trucks.

Table 2.6: Details of Privately Owned Vehicles

Type of Vehicles	Before PMGSY							
	Sabzi	Pastaur	Devpuri	Tera	Kotwa madaniya	Jagdishpur	Gohanna	Pilkha
Cycle	135	155	220	125	211	230	170	200
Motor Cycle	9	2	15	9	6	6	17	12
Car/Jeep	0	0	2	3	0	0	1	1
Tractor	2	2	4	1	3	3	6	1
Bus/Truck/Matador	0	0	0	0	0	0	0	0
Tempo	0	0	0	0	0	0	0	1
Bullock Cart	0	0	0	0	0	0	11	0
Tonga	2	0	2	2	4	0	7	6
Rickshaw Trolley	2	0	12	0	0	2	0	0
Type of Vehicles	After PMGSY							
	Sabzi	Pastaur	Devpuri	Tera	Kotwa madaniya	Jagdishpur	Gohanna	Pilkha
Cycle	200	185	260	160	233	250	210	240
Motor Cycle	24	12	26	15	14	31	55	15
Car/Jeep	3	1	3	5	0	1	3	1
Tractor	5	3	8	1	3	7	8	1
Bus/Truck/Matador	1	0	0	0	0	1	0	0
Tempo	0	0	0	0	0	0	0	4
Bullock Cart	0	0	0	0	0	0	13	0
Tonga	2	0	2	3	4	0	7	6
Rickshaw Trolley	10	0	20	0	0	4	0	0
Type of Vehicles	Change							
	Sabzi	Pastaur	Devpuri	Tera	Kotwa madaniya	Jagdishpur	Gohanna	Pilkha
Cycle	65	30	40	35	22	20	40	40
Motor Cycle	15	10	11	6	8	25	38	3
Car/Jeep	3	1	1	2	0	1	2	0
Tractor	3	1	4	0	0	4	2	0
Bus/Truck/Matador	1	0	0	0	0	1	0	0
Tempo	0	0	0	0	0	0	0	3
Bullock Cart	0	0	0	0	0	0	2	0
Tonga	0	0	0	1	0	0	0	0
Rickshaw Trolley	8	0	8	0	0	2	0	0

Even if we look at the average distance within which the main facilities such as bus station, different types of school, various health facilities, post office and banking facilities are available after the construction of roads under PMGSY and prior to road construction is concerned we find not much change in the eight villages. This is so because some facilities were even earlier available either within the village or within less than one kilometer from the village, there is no scope for that improvement. This is true with respect to primary or upper primary schools, fair price shops and Aganwadi centre.. Among the other facilities, they are also mainly being provided by the government such as PHC, CHC, seed centre, bus station, bank branches, post offices etc. It is not possible for the government to ensure their availability in each village, because they are either governed by a prescribed norm or cannot be made available as a result of paucity of funds at the disposable of the government In fact some of the developed villages may

still not be having all these facilities either within the village or very close to it. However in only two villages some improvements have been witnessed with respect to reduction in the distance of the nearest market (Pastaun), the artificial insemination centre (Gohanna) in our eight selected villages. The details for each village has been provided separately at the end of the chapter in Annexure 2.1.

## (ii) Brief Profile of our Control Villages.

The two control villages selected by us were fairly large size having population close to 5000 in the case of Sikender Khera and 2800 in Dheerampur. The average size of the household was around 6 in the case of the former and just below 6 in the latter (Table 2.7).

**Table 2.7: Details About Control Villages**

Details	Sikanderkheda	Dheeranpur
Block	Bachrawan	Deenshah Gaura
Village/Habitation	Sikanderkheda	Dheeranpur
Details about Village/Habitation	Sikanderkheda	Dheeranpur
Total Households	817	471
Total Population	4950	2800
Male	2775	1465
Female	2175	1335
Literacy (%)		
Male	38.00	35.00
Female	13.00	30.00
Avg. Household Size	6.05	5.92

If we look at the net sown area as a proportion of total area of the village the figures are quite high in both the villages (in excess of 88 percent) In both cases the cultivators are almost exclusively dependent on private tubewells for irrigating their fields. However, Sikendar Khera has four government tubewells as well (Table 2.8).

**Table 2.8: Details of Cultivated Land**

	Sikanderkheda	Dheeranpur
Total Area (acre)	1290	1650
Net Sown Area (acres)*	1140 (88.37)	1500 (90.91)
Net Irrigated Area (Acres)**	1140 (100.00)	1300 (86.67)
<b>Source of Irrigation</b>		
Private Tubewells (Nos)	207	50
Govt. Tubewells (Nos)	4	0
Canal (kms)	0	0
Others	0	0

\* Figure in brackets indicate the percentage of net area sown to total area

\*\* Figure in brackets indicate the percentage of net irrigated area to net area sown

As far as pattern of distribution of workers is concerned once again we witness a very heavy dependence on the primary sector since agriculture and allied activities together account for around 89 and 92 percent of the total workers respectively in Sinkendrakhera and Dheenapur respectively (Table 2.9).

**Table 2.9: Category Wise Distribution of Workers (% Share)**

Category	Present Situation	
	Sikanderkheda	Dheeranpur
Cultivator	63.27	66.15
Agricultural Labour	16.66	17.94
Animal Husbandry	9.36	8.21
Mining	0.00	0.00
Small Industry	3.64	0.00
Other Industries	0.00	0.00
Construction	1.66	3.25
Business	4.75	3.57
Transport and Communication	0.66	0.88
Total	100.00	100.00

From the point of view of facilities like primary, upper primary schools, PHC or private clinic, bank branches, or bus station is concerned both villages only have the facility of a primary school and Aganwadi Centres . None of the facilities are available anywhere else. (Table 2.10).

**Table 2.10: Details of Facility Available In Control Villages**

	Sikanderkheda	Dheeranpur
Primary Schools	v	v
Upper Primary School	0	0
PHC	0	0
Private Clinic	0	0
Bank Branch	0	0
Bus Station	0	0
Aganwadi Centre	v	v

Being fairly large sized villages it is quite natural that some commercial activity is found in these villages. However, this too is limited to tea stalls, general merchant shop, cycle repair, tailor shops etc. Thus, it is quite evident that only the very basic needs of the people are being met in the villages. Moreover, if we look at the situation, as it existed a few years earlier and the present, then too the increase in the existing activities is only minimal (Table 2.11) Thus people are mainly dependent on the nearby centres for meeting their demands.

Table 2.11: Details of Commercial Activities

	2-3 Years Earlier		Present Situation		Change	
	Sikanderkheda	Dheeranpur	Sikanderkheda	Dheeranpur	Sikanderkheda	Dheeranpur
Tea Shop	1	1	3	2	2	1
Sweet Shop	2	0	4	0	2	0
General Shop	20	8	25	10	5	2
Cycle Repair Shop	3	2	4	3	1	1
Scooter/Motor Cycle Repair Shop	0	0	0	0	0	0
Jeep/Car/Tractor repair Shop	0	0	0	0	0	0
Agricultural Implements Shop	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	0	0	0	0
Electronic Shop	0	0	0	0	0	0
TV/Radio Repair Shop	0	0	0	0	0	0
Tailor	3	3	4	3	1	0
Industrial enterprises	0	1	0	1	0	0
Others	1	0	1	0	0	0

If we look at the distance, which the villagers have to cover for availing main facilities besides the primary school and Aganwadi Centre (within the village), the only other facility close by is PDS shop. In fact, incase of Sikendra Khera all facilities are at a distance of above 5 kilometres with sole exception of a private clinic (1-3 kms). The situation is somewhat better in Dheeranpur since some facilities are located within 3-5 kms of the village. In neither of the two villages has there been any improvement in the last few years. For details please refer to Annexure 2.2. It is quite obvious that in the absence of an all weather road in these villages the villagers have to face a lot of inconvenience since the length of the all-weather road required in each village is around 5 kilometres.

In the course of 2-3 years the number of privately owned vehicles have gone up in our control villages as well as despite the fact that there is no all- weather link road. The main increase can be visualized in terms of more cycles in the village. Some increase can also be seen in scooters and motor cycles. But other heavy vehicles have not changed much over the years (Table 2.12)

Table 2.12: Details of Privately Owned vehicles

Type of vehicle	2-3 Years Before		Present Situation		Change	
	Sikanderkheda	Dheeranpur	Sikanderkheda	Dheeranpur	Sikanderkheda	Dheeranpur
Cycle	440	62	590	78	150	16
Motor Cycle	37	31	52	39	15	8
Car/Jeep	1	1	2	1	1	0
Tractor	2	5	5	8	3	3
Bus/Truck/Matador	25	12	32	16	7	4

## B. ANALYSIS OF DATA EMERGNG FROM HOUSEHOLD SURVEY OF SELECTED VILLAGES

### (i) General Information

Analysis of the households has been conducted by classifying the households as either cultivating households or non-cultivating households. Two-thirds of our sample constituted of cultivating households. They are those households where the primary occupation was agriculture. The remaining one-third were non-cultivating households having primary occupation other than agriculture. But this does not mean that they were all landless households. Some or even all in some districts might have been holders of some agricultural land.

The details of respondents with respect to caste categories and educational level of respondents is given in Table 2.13. The concentration of our households was in the OBC category as over 55 per cent of the total sample covered were from this category. Almost one-fifth of the respondents were illiterates and nearly 14 per cent were literates without proper schooling. This accounted for one-third of the total sample. Barely 8 per cent were graduates or post-graduates. Thus the bulk of them (around 58 per cent) had educational qualification upto intermediate level at the most.

Table 2.13: Details About the Respondents

Details	Cultivating Households	Non Cultivating Households	Total
<b>Caste Category</b>			
General	45 (28.13)	11 (13.75)	56 (23.33)
OBC	83 (51.88)	50 (62.50)	133 (55.42)
SC/ST	32 (20.00)	19 (23.75)	51 (21.25)
<b>Total</b>	160 (100.00)	80 (100.00)	240 (100.00)
<b>Average Age</b>	50.66	40.69	47.33
<b>Education Level</b>			
Illiterate	35 (21.88)	15 (18.75)	50 (20.83)
Literate	19 (11.88)	14 (17.50)	33 (13.75)
Upper Primary	52 (32.50)	21 (26.25)	73 (30.42)
HS/Intermediate	42 (26.25)	24 (30.00)	66 (27.50)
Graduate	6 (3.75)	4 (5.00)	10 (4.17)

Post Graduate	6	2	8
	(3.75)	(2.50)	(3.33)
Total	160	80	240
	(100.00)	(100.00)	(100.00)
<b>Primary Occupation</b>			
Agriculture/Animal Husbandry	160	0	160
	(100.00)	(0.00)	(66.67)
Small/Big Shop	0	20	20
	(0.00)	(25.00)	(8.33)
Self Employment	0	37	37
	(0.00)	(46.25)	(15.42)
Manufacturing	0	16	16
	(0.00)	(20.00)	(6.67)
Service	0	7	7
	(0.00)	(8.75)	(2.92)
Total	160	80	240
	(100.00)	(100.00)	(100.00)

As far as details of the households are concerned they are presented in Table 2.14. Around one-third of the total family members are in the age group upto 15 years and between 15-35 years while almost one-fourth fall in the age group 35-60 years. The educational qualifications also vary considerably and the maximum concentration is found in the group having studied upto the upper primary (Class VIII level) since around 38 per cent family members are found in this group. Their working status varies partly because of their age groups as we have children, students and housewives in our sample. However, workers constituted around 37 per cent of the total sample. As can be expected, among the cultivating households over 80 per cent workers have reported agriculture as their main occupation. However, among the non-cultivating households shop keepers and petty businessmen form the largest single group (21 per cent) followed by agriculture and service sector workers (18 per cent each).

Table 2.14: Details About the Households

Details	Cultivating Households	Non Cultivating Households	Total
Male	571	267	838
	54.33	53.19	53.96
Female	480	235	715
	45.67	46.81	46.04
Total	1,051	502	1,553
	100	100	100
<b>Age Group (Yrs)</b>			
Upto 15	350	174	524
	33.3	34.66	33.74
15 to 35	325	189	514
	30.92	37.65	33.1
35 to 60	252	107	359
	23.98	21.31	23.12

Table 2.14 (contd...)

Above 60	124	32	156
	11.8	6.37	10.05
Total	1,051	502	1,553
	100	100	100
<b>Educational Level</b>			
Illiterate	196	106	302
	18.65	21.12	19.45
Literate	62	40	102
	5.9	7.97	6.57
Upper Primary	403	189	592
	38.34	37.65	38.12
HS/Intermediate	213	89	302
	20.27	17.73	19.45
Graduate	54	26	80
	5.14	5.18	5.15
Post Graduate	20	2	22
	1.9	0.4	1.42
Others	103	50	153
	9.8	9.96	9.85
Total	1,051	502	1,553
	100	100	100
<b>Working Status</b>			
Child	112	58	170
	10.66	11.55	10.95
Student	324	145	469
	30.83	28.88	30.2
Working	383	188	571
	36.44	37.45	36.77
Unemployed	2	1	3
	0.19	0.2	0.19
Housewife	180	83	263
	17.13	16.53	16.93
Pensioner	12	7	19
	1.14	1.39	1.22
Old/Handicapped	38	20	58
	3.62	3.98	3.73
Total	1,051	502	1,553
	100	100	100
<b>Main Occupation</b>			
Agriculture/AH	313	34	347
	81.72	18.09	60.77
Agricultural Labour	4	10	14
	1.04	5.32	2.45
Non Agricultural Labour	15	16	31
	3.92	8.51	5.43
Shop/Business	8	40	48
	2.09	21.28	8.41
Manufacturing	1	22	23
	0.26	11.7	4.03
Job	34	19	53
	8.88	10.11	9.28

Table 2.14 (contd...)

Service Sector	2	34	36
	0.52	18.09	6.3
Transport	2	6	8
	0.52	3.19	1.4
Others (Pattal Making)	4	7	11
	1.04	3.72	1.93
Total	383	188	571
	100	100	100
<b>Secondary Occupation</b>			
Agriculture/AH	22	61	83
	20.56	69.32	42.56
Agricultural Labour	14	12	26
	13.08	13.64	13.33
Non Agricultural Labour	50	8	58
	46.73	9.09	29.74
Shop/Business	6	4	10
	5.61	4.55	5.13
Manufacturing	2	0	2
	1.87	0	1.03
Job	3	0	3
	2.8	0	1.54
Service Sector	2	2	4
	1.87	2.27	2.05
Others (Pattal Making)	8	1	9
	7.48	1.14	4.62
Total	107	88	195
	100	100	100

## (ii) Agricultural Situation and Ownership of Livestock

The cultivating households were selected from three different landholding categories. We selected households having upto 2.5 acres, 2.5 to 5.0 acres and above 5.0 acres land holding families. The overall land holding size worked out to 3.11 acres and out of this 3.07 acres (98.7 per cent) was being used for cultivation. The land put to cultivation was fully irrigated in the two higher land holding categories. Even in the lowest land holding size it was as high as 99 per cent (Table 2.15).

Table 2.15: Details of Land Holdings

Details	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
Avg Overall Land Holdings	2.17	3.76	8.16	3.11
Average Size of Cultivable Land	2.13	3.59	7.29	3.07
Average Size of Irrigated Land	2.10	3.59	7.29	3.05

Average area under each crop per household for the different land holding categories is depicted in Table 2.16. The situation prior to construction of road under PMGSY and the present situation are shown in the same table. It is observed that there has been a minor increase in area under wheat and rice in all the land holding categories. This has been mainly at the expense of pulses where a corresponding decrease is seen. Another crop which seemed to have picked up recently is mint where the overall average areas has gone up from around 0.1 acre to 0.17 acre. Spices were not grown by the lower landholding size cultivators earlier. However, since the construction of the road even they have started sowing them over small pieces of agricultural land. Thus the fluctuation whether in terms of increase or decrease in area are only marginal.

**Table 2.16: Average Area Under Each Crop Per Household**

Details	Before PMGSY				After PMGSY			
	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
Wheat	1.82	2.94	5.60	3.25	1.90	2.97	5.89	3.37
Paddy	1.74	2.58	4.87	2.89	1.78	2.61	5.14	2.99
Arhar	0.00	0.01	0.15	0.04	0.00	0.01	0.13	0.04
Urd	0.14	0.36	0.70	0.37	0.07	0.34	0.60	0.31
Chana	0.01	0.06	0.16	0.07	0.00	0.02	0.18	0.06
Other Pulses	0.07	0.06	1.92	0.57	0.05	0.07	0.12	0.08
Other Foodgrains	0.03	0.07	0.26	0.10	0.03	0.10	0.26	0.12
Mustard	0.13	0.38	0.58	0.34	0.20	0.33	0.50	0.33
Other Oil Seeds	0.01	0.12	0.13	0.08	0.01	0.11	0.13	0.08
Potato	0.16	0.07	0.41	0.20	0.06	0.10	0.28	0.13
Vegetables	0.02	0.07	0.14	0.07	0.02	0.12	0.08	0.07
Spices	0.00	0.00	0.05	0.01	0.01	0.02	0.02	0.02
Sugarcane	0.00	0.00	0.08	0.02	0.00	0.00	0.09	0.02
Peppermint	0.00	0.07	0.12	0.06	0.04	0.15	0.35	0.17

A fairly large proportion of even cereals grown by the cultivators is being sold by them in the market. It is fairly obvious that since the larger sized land holding cultivators have higher production they have a higher marketable surplus as well. This is visible across all the crops which are grown in the district (please see Table 2.17). What is encouraging to note is the fact that the marketable surplus has witnessed an increasing trend in the present scenario (after road construction) as compared to the period during which there was no all-weather road connectivity and this is an encouraging sign and gives a positive indication of the impact which the villages have had by virtue of having proper transportation facilities.

Table 2.17: Crop Wise Sale as Percentage to Output

Crops	Before PMGSY				After PMGSY			
	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
No. of HH	58	59	43	160	58	59	43	160
Total Area	120.14	221.47	348.875	690.485	120.14	221.47	348.875	690.485
Wheat	55.24	69.90	81.80	72.45	58.66	72.92	82.04	74.34
Paddy	59.11	69.99	80.80	72.63	61.24	72.65	82.95	75.03
Arhar	0.00	0.00	91.67	85.77	0.00	25.00	87.50	82.69
Urd	67.13	23.20	75.07	43.54	80.00	61.88	32.27	71.39
Chana	50.00	73.08	72.92	71.79	0.00	62.50	70.34	69.31
Other Pulses	34.75	50.68	75.20	59.68	34.68	81.96	38.04	66.15
Other Foodgrains	43.01	46.10	72.34	60.14	50.00	65.79	84.91	74.75
Mustard	9.04	49.47	46.27	32.95	45.43	39.15	49.42	44.76
Other Oil Seeds	76.92	81.87	78.68	79.71	66.67	79.77	85.35	81.54
Potato	83.90	82.47	86.81	85.29	82.49	82.74	89.53	86.35
Vegetables	66.67	55.56	67.50	63.20	0.00	92.88	69.23	88.01
Spices	0.00	0.00	88.57	88.57	100.00	86.71	98.67	91.51
Sugarcane	0.00	0.00	100.00	100.00	0.00	0.00	100.00	100.00
Peppermint	0.00	98.89	100.00	99.44	100.00	94.38	96.69	98.71

As far as the yield rates of the different crops is concerned there has not been a major change between the pre- and post-PMGSY periods. There are crops where the productivity has gone up across all three land holding size cultivators, e.g., wheat, rice and potatoes. In other crops there are fluctuations among the different size groups of land holdings and in some crops productivity has even gone down. However, in the case of large cultivators the productivity levels of each crop has increased even if only marginally (Table 2.18).

Table 2.18: Crop Wise Productivity of Different Crops Per Household (Qtls per Acres)

Crops	Before PMGSY				After PMGSY			
	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
No. of HH	58	59	43	160	58	59	43	160
Total Area	120.14	221.47	348.875	690.485	120.14	221.47	348.875	690.485
Wheat	10.84	10.62	10.86	10.78	11.37	11.49	11.55	11.50
Paddy	12.82	12.90	13.25	13.04	13.89	13.65	14.11	13.91
Arhar	0.00	3.59	3.84	3.82	0.00	3.39	4.17	4.09
Urd	2.76	6.53	2.44	3.95	7.30	2.27	4.87	4.02
Chana	4.00	3.42	3.39	3.42	0.00	3.15	3.49	3.44
Other Pulses	3.42	3.95	3.38	3.67	3.04	11.71	3.56	6.27
Other Foodgrains	2.91	3.57	2.13	2.56	2.05	3.11	2.41	2.60
Mustard	4.86	3.27	3.57	4.76	1.73	3.27	3.41	2.98
Other Oil Seeds	4.33	1.67	2.94	2.34	3.85	1.92	3.06	2.53
Potato	50.94	101.84	72.50	70.00	121.03	108.98	106.90	109.88
Vegetables	3.33	3.07	3.36	3.25	4.35	19.54	3.66	13.33
Spices	0.00	0.00	6.67	6.67	8.61	24.88	17.65	18.99
Sugarcane	0.00	0.00	209.23	209.23	0.00	0.00	254.67	254.67
Peppermint	0.00	0.22	0.17	0.19	6.17	0.36	0.20	0.81

As a result of price escalation the prices of crops have registered an increase in most cases and this too has resulted in the value of agricultural output for different categories of farmers have registered an increase (Table 2.19) between the two points of time. It may therefore be concluded that the villages have certainly been beneficiaries as a result of availability of this crucial infrastructure facility and also because of rise in prices.

**Table 2.19: Crop wise Prices of Different Crops (Rupees/Quintal)**

Crops	Before PMGSY				After PMGSY			
	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
No. of HH	58	59	43	160	58	59	43	160
Total Area	120.14	221.47	348.875	690.485	120.14	221.47	348.875	690.485
Wheat	887	733	723	786	860	853	849	854
Paddy	579	569	575	574	699	681	688	689
Arhar		1,950	1,333	1,580		2,200	2,500	2,380
Urd	1,368	1,875	1,675	1,678	1,802	2,183	2,071	2,050
Chana	1,800	2,070	1,738	1,861	-	1,060	2,075	1,564
Other Pulses	1,567	1,438	1,663	1,547	5,967	1,333	2,038	3,086
Other Foodgrains	450	363	460	404	575	583	454	542
Mustard	1,529	1,674	1,758	1,667	1,695	1,952	2,067	1,927
Other Oil Seeds	1,700	2,171	1,875	2,033	2,000	2,643	2,450	2,525
Potato	253	183	271	234	270	289	294	285
Vegetables	1,250	473	1,505	822	1,600	1,064	1,545	1,237
Spices	-	-	963	385	3,000	2,153	2,013	2,266
Sugarcane	-	-	68	68	-	-	42	42
Peppermint	-	3,565	10,147	20,216	13,148	13,056	28,080	19,189

The change in productivity is also positively being affected by the fact that as compared to the period when the villages did not have a proper road the use of inputs has now increased and people are now using more of fertilizers and pesticides and even high yielding varieties of seeds. This is amply reflected in the fact that the cost of production per acre has gone up considerably from around Rs.6200 per acre to around Rs.8000 per acre for all the cultivating households taken together and this works out to an increase of around 30 per cent (Table 2.20).

**Table 2.20: Cost of Production**

Details	Per Acre Cost of Prod Rs.	
	Before PMGSY	After PMGSY
Below 2.5 Acres	7227	9922
2.5 to 5.0 Acres	6351	8225
Above 5.0 Acres	5715	7287
Grand Total	6182	8047

The rural households own livestock which include cattle, bullocks, goats, sheep, etc. However, the average ownership of livestock per household was not much and not much change can be observed in the ownership pattern if we compare the period before road

construction to the present situation. The increase with respect to cows, young stock, goats, sheep and poultry have been marginal and similarly decrease seen in ownership of buffaloes too has been minimal. So the construction of road has not really brought about any change in the ownership pattern of livestock among the villagers. Ownership is dependent on availability of resources to buy new animals, availability of space to keep them and the availability of grazing land and fodder etc. (for details please see Table 2.21).

Table 2.21: Details of Live Stock Ownership

Details of Livestock	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
Cow	1.05	0.84	0.98	1.31	1.10	1.24
Buffalo	1.40	1.10	1.32	1.31	1.00	1.23
Bullocks	1.82	1.86	1.83	1.82	1.79	1.82
He Buffalos	0.88	0.00	0.88	0.88	0.00	0.88
Young Stock	0.93	0.51	0.80	1.50	1.04	1.36
Goats	2.62	1.79	2.33	2.88	3.50	3.10
Sheep	2.00	0.00	2.00	3.00	0.00	3.00
Poultry	6.56	3.00	5.67	8.00	6.00	7.50
Others	2.00	1.17	1.29	1.00	1.17	1.14

### (iii) Income of the Households

There are various sources such as agriculture and allied activities, wages, non-agricultural activities, etc. through which income of the sample households is being generated. The annual household income from different sources is provided in Table 2.22 and the percentage change in different sources is indicated in Table 2.23.

Table 2.22: Total Household Income from All Sources (Rupees)

Sources of Income	Before PMGSY			After PMGSY			Change in Income %		
	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total
Agriculture	35899 (63.84)	7478 (25.44)	26425 (55.88)	46259 (68.85)	8579 (24.07)	33699 (59.46)	28.86	14.72	27.53
Milk and Milk Products	3105 (5.52)	2020 (6.87)	2744 (5.80)	3499 (5.21)	2570 (7.21)	3189 (5.63)	12.66	27.22	16.23
Other Animal Husbandry Products	9033 (16.06)	6384 (21.72)	8150 (17.23)	5174 (7.70)	2293 (6.43)	4214 (7.44)	-42.72	-64.08	-48.3
Wages	1493 (2.66)	1573 (5.35)	1520 (3.21)	2696 (4.01)	2759 (7.74)	2717 (4.79)	80.58	75.43	78.81
Other eco. Activities	4469 (7.95)	10571 (35.96)	6503 (13.75)	4779 (7.11)	16429 (46.09)	8662 (15.28)	6.94	55.42	33.21
Other Sources	2233 (3.97)	1371 (4.66)	1946 (4.12)	4779 (7.11)	3014 (8.46)	4191 (7.40)	114	119.78	115.36
<b>Avg. Per HH Income</b>	<b>56232</b>	<b>29397</b>	<b>47288</b>	<b>67186</b>	<b>35644</b>	<b>56672</b>	<b>19.48</b>	<b>21.25</b>	<b>19.84</b>

The Tables highlight the fact that if we compare the income levels from different sources after the all-weather road connectivity has been made, it is higher for different sources of income among both cultivating and non-cultivating households. The only exception is with respect to sale from animal husbandry products excluding milk. This has been so in the case of the district because in recent years the sale of animals has reduced considerably. Another thing interesting is that although the share of income from sale of milk has registered an increase, the households are actually consuming more milk at present as compared to before the construction of road under PMGSY. Thus the increase appears to be mainly on account of the escalation in the sale price of milk. The details from income, from individual activities like sale of milk, other animal husbandry product, other economic activities and income from other sources are given in Annexures 2.3, 2.4, 2.5 and 2.6 at the end of the chapter.

#### (iv) Employment Generation Among Wage Labourers

As a result of the better mobility among the wage earners caused by the all-weather road connectivity the average number of days employed has gone up among the wage earners of cultivating as well as non-cultivating households. This holds true for both male as well as female workers. For example among the agricultural workers from cultivating households the average days of employment have gone up from around 40 to 53 among males and from 49 to 60 among females. In the case of the non-cultivating households the average employment registered an increase from around 98 to around 108 days among males while the corresponding increase was from around 60 to 89 days for female workers. This has therefore resulted in increased household income from wages as has been indicated in Table 2.22 (for details please see Table 2.23).

Table 2.23: Employment Generation among Wage Earners

Details	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Ag Labour Male</b>						
Number	10	8	18	10	9	19
Average Days	40.45	48.75	43.95	53.64	77.5	63.68
<b>Female</b>						
Number	5	13	18	5	14	19
Average Days	49	50	49.69	60	60.27	60.19
<b>Non Ag Labour</b>						
<b>Male</b>						
Number	57	24	81	68	24	92
Average Days	98.75	97.52	98.37	129.13	107.61	122.53
<b>Female</b>						
Number		1	1		1	1
Average Days		50	50		65	65
<b>Total</b>						
Number	72	46	118	83	48	131
Average Days	85.66	75.19	81.6	111.84	88.91	102.95

### (v) Marketing of Various Products

Changes are being observed in the way the villagers have been marketing their produce whether it is agricultural or other products. Table 2.24 clearly highlights the fact that before the all-weather road was constructed a bulk of the products were sold within the village particularly agricultural produce and animal husbandry products. However, availability of the all-weather road has opened avenues for higher percentage of sale in not only the nearest *Haat* but also in the *Haat* which is located beyond 3 kilometres of the village. The manufactured products were being sold to a higher extent in the nearest *Haat* and *Haats* beyond 3 kilometres by non-cultivating households even before road construction. But after the availability of the all-weather road this proportion has increased even more. The fact that villagers are preferring to sell their products outside the village goes to show that the *Haats* are offering a better price and this is again reflected in the increased income of household in all activities.

Table 2.24: Details Regarding Marketing of Products (Percentage Share)

Details	Before PMGSY		After PMGSY	
	Cultivating Households	Non Cultivating Households	Cultivating Households	Non Cultivating Households
<b>Agriculture produce</b>				
Within village	67.25	75.21	39.65	51.88
Nearest <i>Haat</i> (with in 3 kms)	19.92	15.79	32.85	29.79
<i>Haat</i> beyond 3 kms	12.83	9	27.5	18.33
<b>Animal Husbandry Produce</b>				
Within village	69.33	88.89	76.67	72.33
Nearest <i>Haat</i> (with in 3 kms)	27.37	0	6.9	5.56
<i>Haat</i> beyond 3 kms	3.3	11.11	16.43	22.11
<b>Manufacturing</b>				
Within village	100	48.75	100	28.87
Nearest <i>Haat</i> (with in 3 kms)	0	11.25	0	7.5
<i>Haat</i> beyond 3 kms	0	40	0	65.63
<b>Others</b>				
Within village	0	23.00	0	24.5
Nearest <i>Haat</i> (with in 3 kms)	0	42.12	0	40
<i>Haat</i> beyond 3 kms	0	34.88	0	35.5

### (vi) Ownership of Assets Among the Households

Ownership of assets is seen in terms of ownership of agricultural implements, vehicles and household durables. Since we are making comparison of the present situation with a few years earlier before road construction a distinct positive change can be visualized. It is found that while in the average number of ploughs and bullock-carts per household have decreased there have been an increase in tractors and chaff cutters. This speaks well for the state of mind

of the cultivator who is showing a definite preference for modern implements compared to the traditional plough etc. Even in the case of ownership of vehicles a distinct improvement can be observed and the same holds true in case of household durables as well. This is the reflection of relatively higher disposable incomes as a result of the advantages reaped from the availability of an all-weather road (for details please see Table 2.25).

Table 2.25: Details of Various Assets Among HH (average)

Details	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
Plough	1.10	1.10	1.10	1.10	1.00	1.08
Bullock Cart	0.96	1.00	0.97	0.80	0.75	0.79
Tractor	0.95	0.67	0.91	1.00	1.00	1.00
Chaff Cutter	0.96	0.90	0.95	0.99	1.45	1.10
Others	0.98	1.00	0.98	1.02	1.00	1.02
Cycle	1.14	1.08	1.12	1.47	1.25	1.40
Motor Cycles	0.77	0.71	0.75	1.14	1.00	1.11
Dunlop Jeep	0.83	1.00	0.86	1.00	1.00	1.00
Jeep	0.80	0.00	0.67	1.00	1.00	1.00
Others	1.00	1.00	1.00	1.00	1.17	1.14
Flour/Rice/Dal Mill	1.00	0.71	0.78	1.00	1.00	1.00
Oil Ghani	0.00	0.50	0.50	0.00	1.00	1.00
Others	0.40	0.67	0.50	1.00	1.00	1.00
Radio	0.79	0.77	0.78	0.95	0.96	0.95
Television	0.61	0.71	0.63	0.98	1.00	0.99
Telephone	0.71	0.50	0.67	0.86	0.75	0.83
Mobile	0.33	0.18	0.29	1.10	1.03	1.08
Others	0.00	1.00	0.50	2.00	1.00	1.50
Total	0.88	0.81	0.86	1.09	1.12	1.10

### (vii) Saving in Travel Time as a result of the All-Weather Road

We enquired from the households about the time taken in the transportation of their produce to the nearest Haat before and after the road was constructed in their village and the details are presented in Table 2.26.

Table 2.26: Time in Transportation Table (in Minutes)

Details	Before PMGSY	After PMGSY
Cycle	36	22
Bullock Cart	56	31
Dunlop Cart	51	34
Rickshaw	40	20
Tempo	12	10
Tractor	31	29
Jeep	11	8

Road construction has certainly facilitated the movement of goods and the time taken has reduced in all forms of transportation. What is brought out is that time saving is relatively higher in slow moving vehicles such as bullock cart and cycle or the Dunlop cart as they could move at a much slower pace on kutchra road or on a kharanja as compared to a mechanized vehicle which could afford to maintain a minimum speed even on a rough uneven surface. After road construction they are moving faster but can not risk moving very fast as the roads are not very broad and the movement of traffic has also registered an increase after the construction of a metal road.

### (viii) Emergence of New Activities among the Households

There has been the emergence of some new activities among cultivating and non-cultivating households after the construction of an all-weather road under PMGSY. The proportion of households which have reported the initiation of new activities was not high. It was found in around 12 per cent cultivating and 21 per cent non-cultivating households. But this too is quite understandable because one can not expect to witness major changes in a rather short time span. The most common among new activities is setting up of small shops. This activity accounted for around 37 and 67 per cent of all new activities initiated among cultivating and non-cultivating households. Some of the other activities include transport, tailoring, dairy and repair works, etc. Despite the fact that the change is not major but is a definite indicator of the positive impact of the road which has provided the impetus to some households to diversify their activities and add to their household income (Table 2.27).

Table 2.27: New Activities Initiated After Road Construction

New Activities Initiated	Cultivating Households	Non Cultivating Households	Total
Yes	19	18	37
	11.88	21.25	15.00
No	141	62	203
	88.13	78.75	85.00
Total	160	80	240
	100.00	100.00	100.00
If yes Type of activity			
Shop	7	12	19
	36.84	66.67	51.35
Transport	2	4	6
	10.53	22.22	16.22
Tailor	1	0	1
	5.26	0	2.7
Barber	1	0	1
	5.26	0	2.7

Table 2.27 (contd.)

Jajmani	2	0	2
	10.53	0	5.41
Dairy	3	1	4
	15.79	5.56	10.81
Doctor	2	0	2
	10.53	0	5.41
Repair	1	1	2
	5.26	5.56	5.41
Total	19	18	37
	100	100	100

### (ix) Improvements in the availment of Educational and Medical Facilities

We had enquired from our respondents whether in their opinion they had benefited in availing educational and medical facilities as a result of the all-weather road in their village. It is very encouraging to note that in both aspects a very high percentage of respondents have replied in the affirmative. Positive response is as high as 80 and almost 98 per cent for those who feel things have improved in availing educational and medical facilities respectively. With respect to education the road has facilitated both children and teachers in going to school comfortably (Table 2.28).

Table 2.28: Changes Observed in Field of Education After Road Construction

	Cultivating Households	Non Cultivating Households	Total
Yes	132	60	192
	82.5	75	80
No	28	20	48
	17.5	25	20
Total	160	80	240
	100	100	100
If Yes, how (Nos)			
Going to School	115	49	164
	34.23	31.82	33.47
Teachers have become regular	81	38	119
	24.11	24.68	24.29
Easy to avail higher education	79	31	110
	23.51	20.13	22.45
Aganwadi centre has opened	50	34	84
	14.88	22.08	17.14
Others	11	2	13
	3.27	1.3	2.65
Total	336	154	490
	100	100	100

In the case of medical facilities on the other hand advantages can be viewed with respect to easy access to PHC, in contacting private clinics and saving of time and money (Table 2.29). In fact the relative ease with which medical facilities can now be availed is possibly the biggest boon according to the village community. They have reported that earlier it was extremely difficult to carry the sick people for treatment either to a government or private hospital/clinic particularly so in the late hours of the evening. The presence of an all-weather road has almost totally eliminated this problem.

Table 2.29: Changes Observed in Availing Medical Facilities After Road Construction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	157	78	235
	98.13	97.5	97.92
No	2	2	4
	1.25	2.5	1.67
Total	160	80	240
	100	100	100
<b>If yes then how (Nos)</b>			
Medical Facilities available within village	18	10	28
	3.78	4.42	3.99
Asha/ANM come regularly	83	44	127
	17.44	19.47	18.09
Reaching PHC is easy	113	54	167
	23.74	23.89	23.79
Contacting private doctor easily	119	52	171
	25	23.01	24.36
Reduction in cost of medicine	112	52	164
	23.53	23.01	23.36
Reduction in cost of transportation on medical services	31	14	45
	6.51	6.19	6.41
Total	476	226	702
	100	100	100

#### (x) Change in Flow of Traffic, Repair and Maintenance of Vehicles etc.

In each of the selected villages our survey team also recorded the flow of traffic in the villages where the all-weather link road had been constructed. Separate records were maintained for different types of vehicles coming to the village or leaving the village and they are being presented in Table 2.30. A discussion with the villagers and some influential persons has indicated that as a result of the road the flow of traffic has gone up by around 30-35 per cent. This clearly indicates that mobility of people has increased considerably as a result of the availability of an all-weather road.

Table 2.30: Details About the Flow of Traffic

Mode of Transport	Sabzi	Pastaur	Devpuri	Tera	Kotwa Madania	Jagdishpur	Gohanna	Pilkha
<b>Incoming</b>								
Cycle	124	126	162	44	64	160	82	206
Motor Cycle/Scooter	62	36	32	14	8	72	24	44
Car/Jeep	2	4	14	0	0	30	2	2
Tractor	2	4	0	0	0	4	0	16
Bus	0	0	8	0	0	0	0	0
Truck	2	0	0	0	0	8	0	0
Tonga	4	0	2	0	6	12	2	4
Rickshaw Trolley	0	0	6	0	0	4	0	0
Bullock/Dunlop Cart	0	0	0	4	0	0	2	6
Vikram	0	0	0	0	0	0	0	0
<b>Out Going</b>								
Cycle	110	188	122	30	70	140	100	166
Motor Cycle/Scooter	56	30	22	8	8	62	40	48
Car/Jeep	4	4	18	2	0	26	2	2
Tractor	0	0	0	0	0	8	2	22
Bus	0	0	8	0	0	0	0	0
Truck	0	0	0	0	0	12	0	0
Tonga	4	0	0	0	8	10	6	6
Rickshaw Trolley	0	0	2	0	0	2	0	2
Bullock/Dunlop Cart	0	0	0	2	0	0	2	4
Vikram	0	0	0	0	0	4	0	0

Not only can the impact of the road be seen in terms of increase in ownership of vehicles and traffic flow but also in terms of a positive impact on the repair and maintenance of vehicles and fuel cost in case of motorized vehicles. Almost 96 per cent respondents have felt that such a positive impact has resulted. In fact both maintenance and fuel costs have gone down by around 7 per cent as reported by the total respondents (Table 2.31).

Table 2.31: Impact of Road on Repair/Maintenance of Vehicles on Fuel Cost

Details	Cultivating Households	Non Cultivating Households	Total
Yes	153	77	230
	95.63	96.25	95.83
No	7	3	10
	4.38	3.75	4.17
Total	160	80	240
	100	100	100
<b>If yes how much (in %)</b>			
Repair and Maintenance & fuel cost	8.10	3.97	6.7

Another improvement which has taken place is that the means of transportation have changed as reported by around 86 per cent households. Those who earlier were used to walking are now using cycles. Many have switched over to scooter or motor cycle or even four-wheeler motorized vehicles (Table 2.32).

Table 2.32: Changes in Means of Transport After Road Construction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	138	68	206
	86.25	85.00	85.83
No	22	12	34
	13.75	15.00	14.17
Total	160	80	240
	100.00	100.00	100.00

The main purpose for going out of town are sale and business, purchasing, education and health. In all cases response has been received by over 90 per cent respondents. The next in importance is social visits followed by entertainment. The purpose of visits varies slightly among cultivating and non-cultivating households. Similarly the frequency of visits also varies among cultivating and non-cultivating households marginally. On an average around 10 visits are made per household per month upto 5 kilometres. The frequency of visits then declines to around 4 and 2 times per month as we look at travel distance of 5-10 kms and above 10 kms respectively (Table 2.33 provides details).

Table 2.33: Main Purpose for Going Out of Village

	Cultivating Households	Non Cultivating Households	Total
Sale/Business	160	80	240
	100.00	100.00	100.00
Purchasing	160	80	240
	100.00	100.00	100.00
Education Purpose	158	79	237
	98.75	98.75	98.75
Health Facility	153	74	227
	95.63	95.50	94.58
Social Visits	122	37	159
	76.25	45.25	66.25
Entertainment	41	17	58
	25.62	21.25	24.17
Others	12	1	13
	7.50	1.25	5.42
Total Households	160	80	240
<b>Frequency of Traveling (Monthly)</b>			
Within 5 KMs	9.62	10.24	9.82
5 to 10 Kms	3.91	4.5	4.1
Above 10 kms	2.33	2.15	2.27

### (xi) Perceptions of Respondents

The opinion of respondents was sought to find out what they felt about the type of improvements the road had on the overall condition of the villages, about the PMGSY scheme itself and their suggestions for making the scheme more efficient.

If we look at their views regarding improvements at the village level multiple responses were received. The maximum advantage is being felt in the marketing of their produce and in procuring seeds and other inputs. The other advantages gained have been in terms of saving in travel time and cost of traveling. Besides this there has also been distinct improvement in the availment of educational and health facilities (Table 2.34). There is not much difference in the response pattern of cultivating and non-cultivating households.

Table 2.34: Improvement in Overall Condition of Village

Improvement	Cultivating Households	Non Cultivating Households	Total
Procurement of Seed Fertilizer	102	51	153
In marketing	126	54	180
Saving of time in traveling	76	39	115
Saving in Cost of traveling	61	30	91
Improvement in education	60	32	92
Improvement in availing health facilities	50	28	78
Awareness is increased	176	89	265
Any Other	1	0	1
Total Households	160	80	240

Besides bringing about a positive impact on the overall condition of the village itself the road constructed under PMGSY has also benefited the individuals as well. In this connection around 86 and 81 per cent respondents from cultivating and non-cultivating households have replied in the affirmative (Table 2.35). The positive impact according to them can be felt by them in the better availment of education by their children, convenience in getting medical treatment, in their overall mobility whether it is for business or social reasons and in achieving higher incomes for the household. All these factors have contributed towards attaining better living conditions for the entire family.

Table 2.35: Changes in Living Condition

	Cultivating Households	Non Cultivating Households	Total
Yes	137	65	202
	85.63	81.25	84.17
No	23	15	38
	14.37	18.75	15.83
Total	160	80	240
	100	100	100

(Table 2.35 contd...)

If yes Than what type			
Education	105	43	148
	26.99	22.75	25.61
Health	53	18	71
	13.62	9.52	12.28
Increase in Income	131	63	194
	33.68	38.62	35.29
Improvement in Living Condition	52	29	81
	13.37	15.34	14.01
Improvement in Transport	48	26	74
	12.34	13.75	12.81
Total	389	189	578
	100	100	100

With respect to the quality of construction of the road, around half the respondents are of the opinion that the quality of the road at the time of construction was either very good or good. Another 40 per cent have reported that it was of average quality and the rest (around 10 per cent) expressed their dissatisfaction with the quality of the road. However, with respect to the existing condition of the roads, around two-thirds feel that over the years the conditions of the road has deteriorated. This is primarily so because proper repair and maintenance is not being carried out on a routine basis. With respect to connectivity almost 90 per cent are happy that the road constructed has been done in such a way that the best connectivity was given top priority under PMGSY (Table 2.36).

Table 2.36: Perception of Respondents About PMGSY

How was the quality of road	Cultivating Households	Non Cultivating Households	Total
Very Good	24	13	37
	15.00	16.25	15.42
Good	48	37	85
	30.00	46.25	35.42
Average	69	26	95
	43.13	32.5	39.58
Poor	19	4	23
	11.88	5	9.58
Total	160	80	240
	100.00	100.00	100.00
How is its present condition			
Very good	6	5	11
	3.75	6.25	4.58
Good	39	25	64
	24.38	31.25	26.67
Has deteriorated	115	50	165
	71.88	62.5	68.75
Total	160	80	240
	100.00	100.00	100.00

Table 2.36 (contd....)

Is connectivity appropriate			
Yes	145	69	214
	90.63	86.25	89.17
No	15	11	26
	9.38	13.75	10.83
Total	160	80	240
	100.00	100.00	100.00
Is repair and maintenance of road being done timely and properly			
Yes	8	7	15
	5	8.75	6.25
No	152	73	225
	95	91.25	93.75
Total	160	80	240
	100.00	100.00	100.00

As far as suggestions are concerned we have received multiple responses. Respondents feel that three aspects need to be accorded top priority. Most important is repair and maintenance of roads on a regular basis. Equally important is the quality of construction which they feel can be improved still further with the help of stricter monitoring, supervision and quality control at the time of road construction. The third aspect which they feel is desirable is to protect the edges of the roads through brick soling. At present the sides of the newly constructed road is kutchra and with wind erosion and monsoons the muddy surface gets eroded and then even the metalled road starts getting damaged. Thus not only is longevity of the road reduced but it also demands more repair and maintenance (Table 2.37).

Table 2.37: Suggestions of Respondents about PMGSY

Suggestions	Cultivating Households	Non Cultivating Households	Total
Maintenance of road	126	63	189
	78.75	78.75	78.75
Quality of Road	108	50	158
	67.50	62.50	65.83
Participation of Villagers	80	49	129
	50.00	61.25	53.75
Connectivity to main road	18	11	29
	11.25	13.75	12.08
Roads are according to Norms	52	22	74
	32.50	27.50	30.83
Brick soling on either side of road	50	23	73
	31.25	28.75	30.42
Others	18	8	26
	11.25	10.00	10.83
Total Households	160	80	240

## C. ANALYSIS OF THE HOUSEHOLDS OF CONTROL VILLAGES

### (i) General Information

To keep the pattern of the analysis similar, even in the case of control villages we have divided the households as cultivating and non-cultivating households. Among the cultivating households two-thirds were OBC while the majority (70 per cent) were SC/ST among our non-cultivating households. As far as the educational status of the respondents is concerned the highest proportion (42.5 per cent) had studied upto the upper primary level. The non-cultivating respondents of our sample were less educated as 45 per cent were illiterate and another 30 per cent could barely read or write. As could be expected the primary occupation of all cultivating households was agriculture but in the case of non-cultivating households 60 per cent were into manufacturing while an equal share were owners of small shops or were self-employed in other fields (Table 2.38).

Table 2.38: Details About Respondents

Details	Cultivating Households	Non Cultivating Households	Total
<b>Caste</b>			
General	1 (2.50)	0(0.00)	1 (1.67)
OBC	27 (67.50)	6(30.00)	33 (55.00)
SC/ST	12 (30.00)	14(70.00)	26 (43.33)
Total	40 (100.00)	20 (100.00)	60 (100.00)
Average Age	54.4	49.6	52.8
<b>Educational Status</b>			
Illiterate	10 (25.00)	9 (45.00)	19 (31.67)
Literate	8 (20.00)	6(30.00)	14(23.33)
Upper Primary	17 (42.50)	5(25.00)	22(36.67)
HS/Inter	4 (10.00)	0(0.00)	4(6.67)
Graduate	1 (2.50)	0(0.000)	1 (1.67)
Total	40 (100.00)	20(100.00)	60 (100.00)
<b>Occupational Status – Primary Occupation</b>			
Agriculture/Animal Husbandry	40 (100.00)	0 (0.00)	40(66.67)
Small/Big Shop	0 (0.00)	4 (20.00)	4 (6.67)
Self employed	0 (0.00)	4 (20.00)	4 (6.67)
Manufacturing	0 (0.00)	12 (60.00)	12 (20.00)
Total	40 (100.00)	20 (100.00)	60 (100.00)

The details of the family members of our households is provided in Table 2.39. Males outnumbered their female counterparts and the average size of the household worked out to 6.67 and 5.9 among cultivating and non-cultivating households respectively. Among both the households around 40-45 per cent had studied upto the primary level. Their primary occupation was mainly agriculture among cultivating households (79 per cent) and manufacturing among non-cultivating households (54 per cent). But the secondary occupation was mainly working as

non-agricultural labourers among cultivating households but was agriculture among the non-cultivating households.

Table 2.39: Details about Households

Details	Cultivating Households	Non Cultivating Households	Total
<b>Sex</b>			
Male	150 (56.18)	64 (54.24)	214 (55.58)
Female	117 (43.82)	54 (45.76)	171(44.42)
Total	267 (100.00)	118(100.00)	385 (100.00)
Average size of the Household	6.67	5.90	6.42
<b>Age</b>			
0 to 15	72 (26.97)	51(43.22)	123(31.95)
15 to 35	104(38.95)	33(27.97)	137(35.58)
35 to 60	63(23.60)	28(23.73)	91(23.64)
Above 60	28 (10.49)	6(5.08)	34(8.83)
Total	267(100.00)	118(100.00)	385(100.00)
<b>Educational Status</b>			
Illiterate	49(18.35)	36(30.51)	85(22.08)
Literate	25(9.36)	10(8.47)	35(9.09)
Upper Primary	108(0.45)	53(44.92)	161(41.82)
HS/Inter	46(17.23)	5(4.24)	51(13.25)
Graduate	11(4.12)	0(0.00)	11(2.86)
Post Graduate	1(0.37)	1(0.85)	2(0.52)
Others	27(10.11)	13(11.02)	40(10.39)
Total	267(100.00)	118(100.00)	385(100.00)
<b>Working Status</b>			
Child	27(10.11)	10(11.02)	37(10.39)
Student	75(28.09)	35(29.66)	110(28.57)
Working	109(40.82)	57(45.76)	163(42.34)
Housewife	40(14.98)	15(12.71)	55(14.29)
Pensioner	8(3.00)	1(0.85)	9(2.34)
Old	8(3.00)	0(0.00)	8(2.08)
Total	267(100.00)	118(100.00)	385(100.00)
<b>Primary Occupation</b>			
Agriculture/Animal Husbandry	89(79.46)	5(9.26)	94(56.63)
Non Agr Labour	13(11.61)	8(14.81)	21(12.65)
Shop/Business	0(0.00)	7(12.96)	7(4.22)
Manufacturing	1(0.89)	29(53.71)	30(18.07)
Service	9(8.04)	4(7.41)	13(7.83)
Others	0(0.00)	1(1.85)	1(0.6)
Total	112(100.00)	54(100.00)	166(100.00)
<b>Occupation Secondary</b>			
Agriculture/Animal Husbandry	8(28.57)	23(65.71)	31(49.21)
Agr Labour	4(14.29)	6(17.14)	10(15.87)
Non Agr Labour	15(53.57)	3(8.57)	18(28.57)
Manufacturing	1(3.57)	3(8.57)	4(6.35)
Total	28(100.00)	35(100.00)	63(100.00)

## (ii) Agricultural Situation and Ownership of Livestock

The average size of land holding for all the cultivating household taken together was 2.8 acres and cultivation was being done on 96 per cent of the holding. All the different land holding categories had fully irrigated land (Table 2.40).

Table 2.40: Details of Land Holding (Acres)

Details	Below 2.5	2.5 to 5.0	Above 5.0	Total
Avg Overall Land Holding	1.35	3.77	7.27	2.8
Average Size of Cultivation	1.32 (97.78)	3.55 (94.16)	6.71(92.30)	2.7(96.42)
Average Size of Irrigation	1.32 (100.00)	3.55(100.00)	6.71(100.00)	2.7(100.00)

The average area under different crops varied from one crop to another but the focus has been on cultivating wheat and paddy. If we look at the present area under different crops across different land holding categories not much variation is found. The increase or decrease is only marginal in most crops but it seems that the focus on wheat has increased particularly among the two larger and holding categories of cultivators and consequently area under wheat has increased by about 10 per cent as compared to 2-3 years ago (Table 2.41).

Table 2.41: Average Area Under Crops Per Household (acres)

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	1.67	2.79	5.13	2.78	1.64	3.13	5.34	2.96
Paddy	1.02	2.01	2.21	1.68	0.94	2.00	2.14	1.63
Arhar	0.00	0.08	0.29	0.09	0.00	0.17	0.14	0.10
Urd	0.40	0.47	1.29	0.59	0.39	0.28	1.09	0.46
Chana	0.06	0.01	0.29	0.08	0.08	0.01	0.36	0.10
Other Pulses	0.00	0.06	0.00	0.03	0.00	0.11	0.00	0.05
Other Food Grains	0.09	0.35	0.38	0.26	0.12	0.35	0.36	0.26
Mustard	0.28	0.47	0.73	0.44	0.17	0.40	0.66	0.36
Other Oil Seed	0.28	0.35	0.51	0.35	0.43	0.15	0.73	0.36
Potato	0.08	0.16	0.50	0.19	0.15	0.04	0.50	0.16
Vegetables	0.00	0.03	0.00	0.01	0.01	0.00	0.00	0.01

With respect to average yield of different crops over the last 2-3 years a mixed picture emerges. Wheat and paddy and other oilseeds show a distinct improvement in yield rates. Productivity levels have declined marginally in case of arhar, urd, mustard and potato (Table 2.42).

Table 2.42: Crops wise Productivity (Qtls/Acre)

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	10.26	10.48	9.09	9.98	11.23	11.14	9.82	10.74
Paddy	11.97	12.76	10.84	12.13	12.83	13.22	12.20	12.90
Arhar	0.00	3.00	2.00	2.43	0.00	2.00	1.50	1.88
Urd	2.17	2.33	2.00	2.16	2.63	1.85	1.97	2.15
Chana	3.98	2.00	2.50	2.88	4.00	4.00	3.10	3.43
Other Pulses	0.00	2.50	0.00	2.50	0.00	2.50	0.00	2.50
Other Food Grains	4.35	3.08	3.99	3.49	4.26	3.07	3.80	3.44
Mustard	3.49	3.10	2.85	3.12	3.53	4.16	3.25	3.76
Other Oil Seed	1.94	2.06	1.95	2.00	2.46	2.01	1.77	2.11
Potato	102.50	117.71	90.86	102.90	91.63	126.87	96.00	97.67
Vegetables	0.00	50.00	0.00	50.00	9.52	0.00	0.00	9.52

If we look at sale of agricultural produce to total production, then there has been an increase in sale of wheat, other food grains, mustard and other oilseeds. But in other cases the sales have shown a decline and this could be because of the marginal decline in yield rates of some crops and also because the households are retaining a larger share of the produce for personal consumption (Table 2.43).

Table 2.43: Sale as Percentage to Total Output

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	58.75	64.14	76.38	66.49	60.04	65.45	80.93	68.74
Paddy	55.31	68.83	67.86	65.58	60.77	68.63	63.39	65.79
Arhar	0.00	77.78	75.00	64.71	0.00	83.33	33.33	36.67
Urd	76.92	77.74	86.11	80.50	73.23	78.92	83.33	78.36
Chana	57.14	0.00	72.00	62.22	40.00	0.00	80.65	60.89
Other Pulses	0.00	80.00	0.00	80.00	0.00	60.00	0.00	60.00
Other Food Grains	66.67	80.52	71.43	75.52	66.67	77.66	89.47	78.48
Mustard	58.62	59.05	62.07	59.73	50.00	74.63	60.40	66.60
Other Oil Seed	56.25	65.38	92.86	69.64	92.81	92.76	88.89	92.43
Potato	83.74	87.32	92.14	88.72	81.25	82.35	94.05	88.24
Vegetables	0.00	96.00	0.00	96.00	75.00	0.00	0.00	75.00

However, the prices of crops per quintal have increased over the last few years and this can primarily be attributed to the overall escalation in price of these agricultural products. The only exception is other oil seeds where prices have gone down marginally (Table 2.44).

Table 2.44: Price of Crops (Rupees/Qtl.)

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	718.67	735.28	718.57	726.13	861.33	869.72	881.43	868.63
Paddy	414.00	468.89	492.86	452.50	466.67	573.50	600.71	538.20
Urd	872.00	744.44	1100.00	854.50	1050.00	783.33	1300.00	973.75
Chana	266.67	111.11	642.86	262.50	513.33	144.44	785.71	395.00
Other Food Grains	63.33	130.83	197.14	117.13	73.33	156.94	164.29	126.88
Mustard	981.33	951.39	1350.00	1032.38	890.00	1386.11	1692.86	1253.75
Other Oil Seed	346.67	354.44	257.14	334.50	560.00	112.06	328.57	317.93
Potato	77.67	83.33	146.43	92.25	166.67	44.44	514.29	172.50
Vegetables	0.00	17.50	0.00	7.88	53.33	0.00	0.00	20.00

Another fact which emerges is that in order to try and improve productivity levels cultivators have increased the use of inputs such as fertilizers, etc. and this is reflected in the increase in cost of production per acre across all the different land holding cultivators. However, the results in terms of increased productivity can be seen in only a few crops (Table 2.45).

Table 2.45: Cost of Production (rupees)

Details	2-3 Years Before			Per Acre Cost of Prod	Present Situation			Per Acre Cost of Prod
	Cult. HH	Non Cult. HH	Total		Cult. HH	Non Cult. HH	Total	
Below 2.5	38277	171447	209724	4584	60258	235311	295569	6461
2.5 to 5.0	95323	389198	484521	6768	114065	482132	596197	8328
Above 5.0	23871	203301	227172	4465	35626	309690	345316	6787
Total	157471	763946	921417	5477	209949	1027133	1237082	7354
<b>Per Household</b>								
Below 2.5	957	8572	3495	4584	1506	11766	4926	6461
2.5 to 5.0	2383	19460	8075	6768	2852	24107	9937	8328
Above 5.0	597	10165	3786	4465	891	15485	5755	6787
Total	3937	38197	15357	5477	5249	51357	20618	7354

Various types of livestock are owned by the respondents and these include cows, buffaloes, bullocks, goats and sheep, etc. There are some variations among cultivating and non-cultivating households and also between the two points of time but the variations are only marginal and so not much change is seen with respect to ownership of livestock (Table 2.46).

Table 2.46: Details of Livestock Ownership (average Number per Household)

Details	2-3 Years Before		Present Situation	
	Cultivating Households	Non Cultivating Households	Cultivating Households	Non Cultivating Households
Cow	0.95	0.64	1.32	1.00
Buffalo	1.19	1.25	1.00	0.75
Bullocks	1.96	2.00	1.24	1.67
Young Stock	0.54	0.89	1.39	0.78
Goats	3.67	0.50	2.00	2.00
Poultry	5.00	0.00	3.00	0.00
Others	0.00	1.00	0.00	1.00
Total	1.27	0.97	1.29	1.19

**(iii) Income of the Households**

The respondents were asked to report all the various sources through which the working members of their households were earning income. Table 2.47 source-wise average household income of cultivating and non-cultivating households at present and 2-3 years earlier. The table reveals that among the cultivating households agriculture alone accounts for 67 per cent of the total income of the household. The contribution of the remaining sources is much lower and the average annual income of these households was around Rs.40500. As against this the two main sources of income of the non-cultivating households are other economic activities such as manufacturing, business and self-employment, etc. and agriculture. This goes to show that even

Table 2.47: Average Income From All Sources Per Household (Rupees)

Average Income from Different Sectors	2-3 Years Before			Present Situation			Change in Income %		
	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total
Agriculture	27544 (67.99)	11578 (43.95)	22222 (62.09)	33456 (67.27)	14321 (39.00)	27078 (59.65)	21.46	23.69	21.85
Animal Husbandry	3614 (8.92)	890 (3.38)	2706 (7.56)	3934 (7.91)	380 (1.03)	2749 (6.06)	9	-57	2
Other Products of Animal Husb.	708 (1.75)	25 (0.09)	480 (1.34)	143 (0.29)	280 (0.76)	188 (0.41)	-80	1020	-61
Wages	1723 (4.25)	2648 (10.05)	2031 (5.68)	3465 (6.97)	3344 (9.11)	3425 (7.54)	101	26	69
Other eco. Activities	2640 (6.52)	8201 (31.13)	4494 (12.56)	1654 (3.32)	12073 (32.88)	5127 (11.29)	-37	47	14
Other Sources	4282 (10.57)	3000 (11.39)	3855 (10.77)	7086 (14.25)	6320 (17.21)	6831 (15.05)	65	111	77
Avg. Per HH Income	40511	26341	35787	49737	36718	45398	22.78	39.39	26.85

among non-cultivators agriculture is contributing around one-third of the total household income. However, average income of these households is relatively much lower primarily

because of the much lower contribution from agriculture. What is encouraging though is that at present the household income are much higher in comparison to what they were 2-3 years earlier. Incomes have gone up by almost 23 per cent among cultivating households and by almost 40 per cent in the case of non-cultivating households. If we take all households together incomes have risen by around 27 per cent. As was the case with cultivating households income from sale of other animal husbandry products have declined among agricultural households and in the case of milk and milk products among non-cultivating households. Separate tables for all the different categories are provided in Annexure 2.7, 2.8, 2.9 & 2.10 at the end of the chapter.

#### (iv) Employment Generation among Wage Labourers

Just as we tried to find out the changes which have taken place in earnings from different sources at present in comparison to 2-3 years earlier we also tried to find out whether there has been changes in the person days of employment for agricultural and non-agricultural wage earners during these two points of time. In agriculture there were only male wage earners among the cultivating households. Their average number of days of employment has gone up considerably. In the case of the no-cultivating households also average number of days employed has registered an increase but to a lesser extent. Moreover, over the years the number of workers has gone down in absolute numbers. The average days of employment have registered an increase in both types of households with respect to non-agricultural wages as well. In fact among the cultivating households even total number of non-agricultural wage earners has gone up (for details please see Table 2.48)

Table 2.48: Employment Generation Among Wage Earners

Details	2-3 Years Before			Present Situation		
	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total
<b>Ag Labour Male</b>						
Number	4	7	11	4	5	9
Avg No of Days	48	53	51	66	65	66
<b>Ag Labour Female</b>						
Number	0	1	1	0	1	1
Avg No of Days	0	25	25	0	30	30
<b>Non Ag Labour Male</b>						
Number	17	12	29	24	11	35
Avg No of Days	86	120	100	94	132	106
<b>Average Wages Per Household (Rs)</b>	1723	2648	2031	3465	3344	3425

### (v) Marketing of Products

The marketing of products produced by agriculture, animal husbandry sector or other sectors is done either within the village or '*Haats*' close to or slightly far away. Table 2.49 brings out the fact that although the control villages do not have a proper link road they are realizing the importance of selling their agricultural produce outside the village to get more remunerative prices. The best that they can do within the given circumstances is to visit the *Haat* which is within 3 kms from the village. However, the situation has been reversed in the case of animal husbandry products. This is so because the share of income from this source has gone down over the years as was indicated in Table 2.47 and since marketable surplus has gone down they prefer to sell two-thirds within the village at present and one-third in the *Haat* within 3 kms whereas the figures were the other way round only 2-3 years earlier. However, the increase is not very high in either category of households.

Table 2.49: Details Regarding Marketing of Products (in Percentage)

Details	2-3 Years Before			Present Situation		
	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total
<b>Agriculture produce</b>						
Within village	72.5	75	72.56	59.13	70	59.39
Nearest Haat (with in 3 kms)	19.25	25	19.39	32.13	30	32.07
Haat Relatively beyond 3 kms	8.25	0	8.05	8.74	0	8.54
<b>Animal Husbandry Product</b>						
Within village	33.33	0	33.33	66.67	0	66.67
Nearest Haat (with in 3 kms)	66.67	0	66.67	33.33	0	33.33
Haat Relatively beyond 3 kms	0	0	0	0	0	0
<b>Manufacturing</b>						
Within village	100	46.25	50.38	100	35.42	40.38
Nearest Haat (with in 3 kms)	0	16.25	15	0	25.42	23.46
Haat Relatively beyond 3 kms	0	37.5	34.62	0	39.16	36.16

### (vi) Ownership of Assets Among the Households

Assets such as agricultural implements, vehicles, non-agricultural implements and household durables with the households have been estimated on a per household basis. Some variation is found among the cultivating and non-cultivating households. Similarly if we look at the change in ownership of these assets at present as compared to a few years earlier not much change is witnessed. This is quite natural keeping in mind the income levels of these households. Consequently whether a particular asset has increased or decreased the change is barely marginal (Table 2.50).

Table 2.50: Details About Assets (Average Number)

Details	2-3 Years Earlier			Present Situation		
	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total
Plough	1.15	1.00	1.13	1.09	1.00	1.08
Bullock cart	1.00	1.00	1.00	0.42	1.00	0.46
Tractor	0.00	0.00	0.00	1.00	0.00	1.00
Chaff Cutter	1.00	1.00	1.00	1.00	1.00	1.00
Others	0.92	1.00	0.92	1.00	1.00	1.00
<b>Transport</b>						
Cycle	1.08	1.05	1.07	1.19	1.21	1.20
Motor Cycle/Scooter	0.67	0.00	0.57	1.17	1.00	1.14
Others	0.00	1.00	1.00	0.00	1.00	1.00
<b>Non Ag Implements</b>						
Flour/Rice/Dal Mill	0.00	1.00	1.00	0.00	1.00	1.00
Others	1.00	0.00	1.00	1.00	0.00	1.00
<b>Household Assets</b>						
Radio	0.90	1.00	0.92	1.00	1.00	1.00
Television	0.00	0.00	0.00	1.00	1.00	1.00
Telephone	1.00	0.00	1.00	1.00	0.00	1.00
Mobile	0.14	0.38	0.21	1.05	1.00	1.03
<b>Total</b>	<b>0.88</b>	<b>0.85</b>	<b>0.87</b>	<b>1.03</b>	<b>1.08</b>	<b>1.04</b>

## (vii) Emergence of New Activities in Recent Years

The situation of our control villages has not changed in the last 2-3 years as is evident from the fact that in one cultivating and 2 non-cultivating households have reported to have initiated a new activity. The new activity common in both households is transport while the additional activity of non-cultivating households is starting a small shop (Table 2.51).

Table 2.51: Details About New Work Started by Members of Household 2-3 Years Before

Details	Cult. HH	Non Cult HH	Total
Yes	1	2	3
	2.5	10	5
No	39	18	57
	97.5	90	95
Total	40	20	60
	100	100	100
<b>If Yes, Than of What Type</b>			
Shop	0	1	1
	0	50	33.33
Transport	1	1	2
	100	50	66.67
Total	1	2	3
	100	100	100

### (viii) Time Taken in Reaching the Nearest Market and Frequency of Traveling

Since the control villages do not have an all-weather road and the connectivity required is approximately 5 kilometers it is quite obvious that the time taken by villagers to reach the nearest market is higher as compared to villages which have proper link roads. Table 2.52 indicates time taken by different means of transportation at present.

Table 2.52: Time Taken to Reach the Nearest Market Centre

Mode of Transport	Approximate Time (in Min.)
Cycle	47
Bullock Cart	58
Rickshaw Trolley	45
Tractor Trolley	40
Other Means (Jeep, etc.)	35

The villagers feel that in case an all-weather road is constructed in their village considerable time may be saved and it will also be more convenient for them whether they are going for marketing of their produce or purchasing or for any other reason.

As a result of the absence of a proper road the frequency of their travel is also restricted. On an average around 4 visits are being made upto 5 kms, but for distances of 5-10 or above 10 kms the frequency of visits declines to 3 and 2 respectively (Table 2.53).

Table 2.53: Average Frequency of Traveling

Details	Cult. HH	Non Cult HH	Total
Within 5km	3.60	4.15	3.78
5-10 km	3.05	2.80	2.97
above 10	1.80	2.10	1.90

The main reason for moving out of the village is for business reasons, purchasing or availing educational or health facilities. Some of the other relatively lesser important reasons are social visits and entertainment (for details please see Table 2.54).

Table 2.54: Main Purpose for Going Out of Village

Details	Cult. HH	Non Cult HH	Total
Sale/Business	40	20	60
	19.8	23.26	20.83
Purchasing	40	20	60
	19.8	23.26	20.83
Education Purpose	40	20	60
	20.3	23.26	21.18
Health Facility	39	20	59
	19.31	23.26	20.49
Social Visits	29	5	34
	14.36	5.81	11.81
Entertainment	12	1	13
	5.94	1.16	4.51
Others	1	0	1
	0.5	0	0.35
Total	202	85	287
	100	100	100

**(ix) Problems arising in the absence of an All-weather Road**

All the households from cultivating as well as non-cultivating households are in agreement that the absence of a proper road causes hindrance in the availment of educational and health facilities. Two separate tables Table 2.55 and Table 2.56 have been developed to indicate views of the respondents regarding education and health aspects.

Table 2.55: Problem of Educational Facility due to Non Availability of All Weather Road

Details	Cult. HH	Non Cult HH	Total
Yes	40	17	57
	100	85	95
No	0	3	3
	0	15	5
Total	40	20	60
	100	100	100
<b>If Yes, then of what type</b>			
Problems in going to School	33	14	47
	32.04	33.33	32.41
Problems of teacher' regularity	28	13	41
	27.18	30.95	28.28
Availing higher education difficult	28	7	35
	27.18	16.67	24.14
Aganwadi centre could have opened	13	7	20
	12.62	16.67	13.79
Others	1	1	2
	0.97	2.38	1.38
Total	103	42	145
	100	100	100

Table 2.56: Problem of Health Facility Due to Non Availability of All Weather Road

Details	Cult. HH	Non Cult HH	Total
Yes	40	20	60
	100	100	100
Total	40	20	60
	100	100	100
If yes, than of what type			
Medical Facilities are not available within village	19	13	32
	13.67	15.85	14.48
Asha/ANM do not come regularly	27	15	42
	19.42	18.29	19
Reaching PHC	26	15	41
	18.71	18.29	18.55
Contacting private doctor	31	20	51
	22.3	24.39	23.08
Expense in cost of medicine	32	16	48
	23.02	19.51	21.72
Expense in cost of transportation on medical services	4	3	7
	2.88	3.66	3.17
Total	139	82	221
	100	100	100

The type of problem faced with education is that when schools are located at a distance children find it difficult to attend school regularly. Teachers who live outside the school tend to be irregular and this affects regularity and quality of teaching.

Similarly if we look at the response of the respondents regarding availment of medical facilities the problems are in reaching the PHC or other government hospitals and even the private doctors. This problem is felt much more when medical assistance is required at night. Then if one has to go out to purchase medicines the cost of transportation is involved and so treatment becomes more expensive. Another problem faced is that the ANM/Asha also are unable to visit the villages more frequently than what they would have done had the link road been properly constructed.

Because of these limitations faced by them the villagers are unanimously of the opinion (over 86 per cent responses) that an all weather road means very much to them because it will facilitate them primarily in availing educational and health facilities (Tables 2.57 and 2.58).

Table 2.57: Details About the Importance of All Weather Road

Details	Cult. HH	Non Cult HH	Total
Very Important	32	14	46
	80	70	76.67
Important	5	1	6
	12.5	5	10
Not Important	3	5	8
	7.5	25	13.33
Total	40	20	60
	100	100	100

Table 2.58: Details of Difficulties Due to Non Availability of Road

Details	Cult. HH	Non Cult HH	Total
Health	34	20	54
	87.18	95.24	90
Education	5	1	6
	12.82	4.76	10
Total	39	21	60
	100	100	100

#### D. MAIN POINTS ARISING OUT OF THE ANALYSIS

The analysis carried out on the basis of the field survey conducted in the district of Rae Bareli clearly indicate towards the fact that the construction of an all-weather road providing connectivity to our selected villages has had a positive impact. Some of these advantages can actually be measured while the others may not be easy to quantify but have certainly been felt by our respondents.

In the field of agriculture it was found that with easy access to the markets the use of inputs has gone up and its effect can be seen in a few crops in terms of increased productivity. Higher agricultural production has generated more marketable surplus and so incomes from agriculture have gone up. Improved mobility has also resulted in giving villagers the option to sell a higher portion of their produce in the *Haats* outside the village where they can hope to find more remunerative prices not only for their agricultural produce but other products as well. Not only have incomes from agriculture gone up but the improvement is clearly visible in income from other sources as well and the overall income

has gone up by around 20 per cent at present as compared to what it was prior to the period when the village did not have proper road connectivity.

Even the wage earners, both agricultural and no-agricultural, are getting more days of employment now as their mobility has increased.

The total number of privately owned vehicles particularly scooters and motor cycles has increased over the years and a proper metalled road has reduced travel time as well as cost of repair and maintenance of their vehicles. The flow of traffic has registered a considerable increase after the road was constructed and the mobility of people for business or other purposes is on the increase.

Coming to the advantages which can not easily be quantified but are very significant are the advantages gained in availing educational facilities. Commuting on a daily basis has become certainly more convenient and the students find it quite easy now to attend schools which were not located within the village. Even for the teachers who do not live in the village but are teaching in the village primary schools have benefited and to a certain extent it is reflected in their being relatively more regular. Possibly the biggest boon which the road has provided is in the availment of medical facilities. Earlier, when a proper road did not exist, it was extremely difficult for villagers to take the sick for treatment either to the nearby PHC or other government hospital or to a private clinic. Their problems were compounded in case treatment was required during night. However, things have improved considerably because of the all-weather metal road constructed under PMGSY.

Our respondents as well as the influential people who we interviewed during the course of field survey unanimously agree that not only have their levels of living improved but even the overall condition of the village is improving.

A comparison with the control of villages which do not have proper road connectivity clearly highlights the fact that the availability of road is a distinct advantage. The income levels of households is lower in the two control villages although there has been some improvement in income levels the average household income is less as compared to the villages with proper road connectivity. The villagers are definitely of the opinion that a proper road is accorded a high priority by them because of the distinct advantage that it would provide not only in their income levels through easy access to the market but also in availing educational and medical facilities and in the saving of time and money on travel and repair and maintenance of their vehicles.

Having said about the quantitative and qualitative advantages it is also important to throw light on the quality of road construction, maintenance of roads and the level of satisfaction among our respondents and influential persons. The views emerging from the discussions with the officials about the type of problems faced by them need also to be highlighted. The respondents are influential persons in general are not happy about the repair and maintenance of the roads constructed under PMGSY although they are more or less satisfied by the quality of road which was initially constructed. As a result of repair and maintenance not being carried out on a regular basis the condition of the roads surveyed by us has deteriorated. This is so despite the fact that the PMGSY scheme has a provision for five year maintenance of the roads by which the contractors are bound. Our discussion with the officials in the district dealt with this problem. It was pointed out that under the norms laid down, contract for road construction under PMGSY can be given to only Class A contractors. The rules clearly specify the conditions which have to be fulfilled for a contractor to be eligible for Class A status. This includes availability of staff as well as equipment as laid down in specifications. The contractor also needs to have a laboratory. One of the major problems which officials face in getting Class A contractors is that those individuals who are qualified are not really very keen to submit tenders for construction of small roads and usually the roads constructed under PMGSY range from around 1 kilometre to around 3 kilometres in general. Only in some cases alone are roads in excess of 3 kilometres. To add to the problem, a few years earlier the district had a sizeable number of contractors who were listed in Class A category but then the quality of a particular road was not found satisfactory and as a result a number of contractors who were involved in the construction of the road got black-listed and so the existing number of Class A contractors has been reduced. Another problem with these Class A contractors are that they do not necessarily have all the equipment and staff. They manage it by hiring equipment while construction work is going on. Since contractors are few and simultaneously a number of roads have to be constructed under PMGSY a contractor may even be involved in the construction of more than one road. This only compounds the contractor's problem of having sufficient equipment for all the roads for which he has obtained a work order.

With regard to maintenance of roads, the officials point out that the clause talks of only routine maintenance and the amount sanctioned is quite low. Some of the contractors who have been involved in road construction under PMGSY either have political or muscle

power. It becomes extremely difficult for the PMGSY officials to ensure regular repair and maintenance of the roads. At least in one case it was pointed out that the contractor in question does not bother to the request and subsequent reminders sent to him for carrying out repair and maintenance. At the time when road is being finalized for construction the department conducts a survey of the traffic flow and then projections are made for the next 5 years based on a hypothetical increase in the flow of traffic which is expected to take place on a yearly basis. This indicates the desired strength of the road to be constructed along with the soil testing report. In many cases these projections are not correct and actual traffic flow is much higher and causes greater wear and tear than was expected. This is found to a much higher degree in the case of upgradation of the through routes where traffic flow may go up much more than was anticipated at the initial time.

Keeping in mind some of the problems highlighted by officials of PMGSY it is desirable that some rethinking needs to be done so that the genuine problems may be overcome. First of all the computations for flow of traffic need to be suitably altered so that the strength of roads may be increased. The amount provided under repair and maintenance may also be increased if it is genuinely felt that the amount is inadequate. Moreover, some provision may also be made for major repairs to be undertaken. For this the department may be provided additional funds on a need based criteria rather than give a fixed amount to all districts. And one area where strict control has to be exercised is on making the contractors accountable for the lapses made by them either during road construction or in its maintenance. Rules already exist to ensure the same but their implementation is not being done effectively for some reason or another.

On the whole, however, the PMGSY scheme has come as a blessing to those rural habitations which had remained unconnected for some reason or the other and they have gained in more ways than one under the scheme as highlighted by the analysis of our selected villages as well as in their comparison with those villages who still do not have proper road connectivity.

## Annexure 2.1: Distance of Main Facilities from Village

## (a) Sabzi

Facility	Before PMGSY				After PMGSY		
	Distance (kms)	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5 kms	√	--	Kharanja	Above 5 kms	√	--
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Within Village	√	--	Kharanja	Within Village	√	--
High School/Inter College	3 to 5 kms	√	--	Kharanja	3 to 5 kms	√	--
Health Sub Centre	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
PHC	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
CHC	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
Family Planning Centre	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
Aganbadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
Market	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
Cooperative Seed Centre	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
Cooperative Societies	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
Bank Branch	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
Post Office	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
Artificial	3 to 5 kms	--	√	Kharanja	3 to 5 kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## (b) Pastaur

Facility	Before PMGSY				After PMGSY		
	Distance (kms)	Walking /Cycle	Walking/ Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5 kms	√	--	Mixed	Above 5 kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Within Village	√	--	Kharanja	Within Village	√	--
High School/Inter College	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Health Sub Centre	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
PHC	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
CHC	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
Family Planning Centre	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Aganbadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Market	Above 5 kms	√	--	Kharanja	1 to 3 kms	--	√
Cooperative Seed Centre	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Cooperative Societies	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Bank Branch	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Post Office	1 to 3 kms	--	√	Kharanja	1 to 3 kms	--	√
Artificial	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## (c) Devpuri

Facility	Before PMGSY				After PMGSY		
	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles
Bus station	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
High School/Inter College	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
Health Sub Centre	Within Village	√	--	Kuttchi	Within Village	√	--
PHC	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
CHC	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Family Planning Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Aganbadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Market	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Cooperative Seed Centre	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Cooperative Societies	3 to 5 kms	--	√	Kuttchi	3 to 5 kms	--	√
Bank Branch	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Post Office	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Artificial	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

## (d) Tera

Facility	Before PMGSY				After PMGSY		
	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles
Bus station	1 to 3 kms	√	--	All Weather Road	1 to 3 kms	√	--
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	Within Village	√	--	Kuttchi	Within Village	√	--
Health Sub Centre	3 to 5 kms	√	--	Mixed	3 to 5 kms	√	--
PHC	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
CHC	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
Family Planning Centre	Above 5 kms	√	--	Mixed	Above 5 kms	--	√
Aganbadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
Market	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
Cooperative Seed Centre	3 to 5 kms	√	--	Mixed	3 to 5 kms	--	√
Cooperative Societies	3 to 5 kms	√	--	Mixed	3 to 5 kms	--	√
Bank Branch	Above 5 kms	√	--	Mixed	Above 5 kms	--	√
Post Office	Above 5 kms	√	--	Mixed	Above 5 kms	√	--
Artificial	3 to 5 kms	√	--	Mixed	3 to 5 kms	√	--
PDS Shop	3 to 5 kms	√	--	Mixed	Within Village	√	--

**(e) Kotwa Madaniya**

Facility	Before PMGSY				After PMGSY		
	Distance (kms)	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5 kms	√	--	Kuttchi	Above 5 kms	√	--
Primary	Within Village	√	--	Kuttchi	Within Village	--	√
Upper Primary School	3 to 5 kms	√	--	Mixed	3 to 5 kms	√	--
High School/Inter College	Above 5 kms	√	--	Mixed	Above 5 kms	√	--
Health Sub Centre	Above 5 kms	√	--	Mixed	Above 5 kms	--	√
PHC	Above 5 kms	√	--	Mixed	Above 5 kms	--	√
CHC	Above 5 kms	√	--	Mixed	Above 5 kms	--	√
Family Planning Centre	Within Village	√	--	Kharanja	Within Village	√	--
Aganbadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	Within Village	√	--	Kharanja	Within Village	√	--
Market	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
Cooperative Seed Centre	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
Cooperative Societies	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Bank Branch	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
Post Office	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
Artificial	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

**(f) Jagdishpur**

Facility	Before PMGSY				After PMGSY		
	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
High School/Inter College	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
Health Sub Centre	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
PHC	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
CHC	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
Family Planning Centre	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
Aganbadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
Market	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
Cooperative Seed Centre	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
Cooperative Societies	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
Bank Branch	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
Post Office	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
Artificial	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

**(g) Gohanna**

Facility	Before PMGSY				After PMGSY		
	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles
Bus station	Less Than 1Kms	--	√	Mixed	Less Than 1Kms	--	√
Primary	Within Village	--	√	Mixed	Within Village	--	√
Upper Primary School	Within Village	--	√	Mixed	Within Village	--	√
High School/Inter College	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
Health Sub Centre	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
PHC	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
CHC	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
Family Planning Centre	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
Aganbadi Centre	Within Village	√	--	Mixed	Within Village	√	--
Private Clinic	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
Market	Above 5 kms	--	√	Mixed	Above 5 kms	--	√
Cooperative Seed Centre	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Cooperative Societies	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Bank Branch	1 to 3 kms	--	√	Kharanja	1 to 3 kms	--	√
Post Office	1 to 3 kms	--	√	Kharanja	1 to 3 kms	--	√
Artificial	Above 5 kms	--	√	Mixed	1 to 3 kms	--	√
PDS Shop	Within Village	√	--	Mixed	Within Village	√	--

**(h) Pilkha**

Facility	Before PMGSY				After PMGSY		
	Distance (kms)	Walking /Cycle	Walking/ Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles
Bus station	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
High School/Inter College	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
Health Sub Centre	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
PHC	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
CHC	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
Family Planning Centre	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Aganbadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	1 to 3 kms	√	--	Kharanja	1 to 3 kms	√	--
Market	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
Cooperative Seed Centre	Above 5 kms	√	--	Mixed	Above 5 kms	--	√
Cooperative Societies	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Bank Branch	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Post Office	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Artificial	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## Annexure 2.2: Distance of Main Facilities from Village

## (a) Sikandar Kheda

Facility	2-3 Years Earlier				Present Situation		
	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5 kms	--	√	Kharanja	Above 5 kms	√	--
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
High School/Inter College	Above 5 kms	√	--	Kharanja	Above 5 kms	√	--
Health Sub Centre	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
PHC	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
CHC	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
Family Planning Centre	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
Aganbadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	Less Than 1Kms	--	√	Kharanja	1 to 3 kms	--	√
Market	Above 5 kms	√	--	Kharanja	Above 5 kms	--	√
Cooperative Seed Centre	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
Cooperative Societies	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
Bank Branch	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
Post Office	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
Artificial	Above 5 kms	--	√	Kharanja	Above 5 kms	--	√
PDS Shop	Less Than 1 Kms	√	--	Kharanja	Less Than 1 Kms	√	--

## (b) Dheeranpur

Facility	2-3 Years Earlier				Present Situation		
	Distance (kms)	Walking/Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance (kms)	Walking /Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5 kms	√	--	Kuttchi	Above 5 kms	√	--
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	Above 5 kms	√	--	Kuttchi	Above 5 kms	√	--
Health Sub Centre	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	√	--
PHC	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	--	√
CHC	Above 5 kms	--	√	Kuttchi	Above 5 kms	--	√
Family Planning Centre	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	√	--
Aganbadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	√	--
Market	Above 5 kms	√	--	Kuttchi	Above 5 kms	√	--
Cooperative Seed Centre	Above 5 kms	√	--	Kuttchi	Above 5 kms	√	--
Cooperative Societies	3 to 5 kms	√	--	Kuttchi	3 to 5 kms	√	--
Bank Branch	Above 5 kms	--	√	Kuttchi	Above 5 kms	--	√
Post Office	Above 5 kms	√	--	Kuttchi	Above 5 kms	√	--
Artificial	Above 5 kms	√	--	Kuttchi	Above 5 kms	√	--
PDS Shop	N.A.	√	--	Kuttchi	N.A.	√	--

## Annexure 2.3: Per Household Income from Animal Husbandry

Details	Before PMGSY			After PMGSY		
	Cultivating Households	Other non Ag Activities	Total	Cultivating Households	Other non Ag Activities	Total
Total Production	660	404	575	668	515	617
Value of Total Production	6470	3889	5610	7862	5966	7230
Total Sale	369	251	329	315	198	276
Total Value of Sale	3105	2020	2744	3499	2570	3189

## Annexure 2.4: Income from other sale of Animal Husbandry (Per HH)

Details	Before PMGSY			After PMGSY		
	Cultivating Households	Other non Ag Activities	Total	Cultivating Households	Other non Ag Activities	Total
Sale of Animal	8926	6375	8076	5091	2271	4151
Sale of Other Products	107	9	74	83	23	63
Total	9033	6384	8150	5174	2293	4214

## Annexure 2.5: Average Income from Other Economic Activities (rupees)

Details	Before PMGSY			After PMGSY		
	Cultivating HH	Non Cult. HH	Total	Cultivating HH	Non Cult. HH	Total
Manufacturing	94	1825	671	107	3130	1114
Shop/Business	312	2420	1015	609	4163	1794
Self Employment	72	3414	1186	558	6034	2384
Job	3663	2580	3302	2798	2588	2728
Others	328	331	329	706	515	643
Total	4468	10571	6503	4779	16429	8662

## Annexure 2.6: Per Household Income from Other Sources.

Details	Before PMGSY			After PMGSY		
	Cultivating HH	Non Cult. HH	Total	Cultivating HH	Non Cult. HH	Total
Interest	281	0	188	188	0	125
Rent	344	0	229	513	150	392
Money order	474	344	430	984	1059	1009
Pension	394	690	493	2048	1110	1735
Others	741	338	606	1047	695	930
Total	2233	1371	1946	4779	3014	4191

## Annexure 2.7: Income from Milk and Milk Products

Details	2-3 Years Before			Present Situation		
	Cultivating HH	Non Cult. HH	Total	Cultivating HH	Non Cult. HH	Total
Total Production (Litres)	25740	5370	31110	21085	3030	24115
Value of total product (Rs)	242730	53440	296170	269820	39420	309240
Total Sale (Litres)	15330	1780	17110	12785	600	13385
Total Value of Sale (Rupees)	144540	17800	162340	157360	7600	164960
<b>Average per Household</b>						
Total Production (Litres)	644	269	519	527	152	402
Value of total product (Rs)	6068	2672	4936	6746	1971	5154
Total Sale (Litres)	383	89	285	320	30	223
Total Value of Sale (Rupees)	3614	890	2706	3934	380	2749

Annexure 2.8: Income from Other Sale of Animal Husbandry (Rs)

Details	2-3 Years Before			Present Situation		
	Cultivating HH	Non Cult. HH	Total	Cultivating HH	Non Cult. HH	Total
Sale of Animal	23,800	500	24,300	5,700	5,600	11,300
Sale of Other Products	4,500	-	4,500	-	-	-
Total	28,300	500	28,800	5,700	5,600	11,300
<b>Per Household</b>						
Sale of Animal	595	25	405	143	280	188
Sale of Other Products	113	-	75	-	-	-
Total	708	25	480	143	280	188

Annexure 2.9: Income from Other Economic Activities

Details	2-3 Years Before			Present Situation		
	Cultivating HH	Non Cult. HH	Total	Cultivating HH	Non Cult. HH	Total
Manufacturing	1600	75265	76865	2250	104080	106330
Business	0	74245	74245	0	109555	109555
Self Employment	0	14500	14500	7500	27825	35325
Job	104000	0	104000	56400	0	56400
Total	105600	164010	269610	66150	241460	307610
<b>Per HH</b>						
Manufacturing	40	3,763	961	56	5,204	1,329
Business	-	3,712	928	-	5,478	1,369
Self Employment	-	725	181	188	1,391	442
Job	2,600	-	1,300	1,410	-	705
Total	2,640	8,201	3,370	1,654	12,073	3,845

Annexure 2.10: Average Income from Other Sources

Details	2-3 Years Before			Present Situation		
	Cultivating HH	Non Cult. HH	Total	Cultivating HH	Non Cult. HH	Total
Money Order	7625	3750	6333	10175	7000	9117
Pension	360	0	300	3960	3600	3900
Others	2500		2500	4815		4815
Total	4282	3000	3991	7086	6320	6912
<b>Present Situation</b>						
Money Order	10175	7000	9117			
Pension	3960	3600	3900			
Others	4815		4815			
Total	7086	6320	6912			

## CHAPTER III

### IMPACT OF PMGSY IN JHANSI DISTRICT

#### B. GENERAL INFORMATION ABOUT THE VILLAGES

Just as Chapter II dealt with Rae Bareli, the analysis in this chapter will focus on the selected and control villages of Jhansi district. The format for data collection across all elected districts was the same. Accordingly we selected 8 villages having all-weather roads constructed under PMGSY and 2 control villages where no road is found at present. And from each location 30 households were selected for detailed field survey.

The details regarding our selected villages is being provided in Table 3.1 with respect to the road constructed under PMGSY. In order to select roads of a minimum distance and constructed in different phases we had to cover 4 blocks. In Jhansi we were lucky to be able to get relatively lengthier roads. The shortest road in our sample was just below 3 kms in length while the maximum length of the road was almost 9 kms. Two of these were initiated and completed in 2002 while 4 were initiated in 2004. The remaining 2 were initiated in 2006. The cost of construction has varied as a result of the length of the road and also because of the results of the soil testing and flow of traffic in the period before road was constructed. Therefore we find that the road constructed in Tilautha cost Rs.90 lakh although it was only 3.05 kms in length while the road in Punauli Khurd which was 3.10 kms cost only Rs.53.68 lakh. Just as it was observed in the Rae Bareli the quality of road at the time of construction was good but its present condition is not satisfactory in five villages because only in one village maintenance work is being done regularly.

**Table 3.1: Sample Villages of Rae Bareli (Details of PMGSY Roads)**

Village	Block	Length of Road (Kms)	Cost of Construction (Rs. Lakhs)	Year of Initiation	Year of Completion	Quality of Road (Giri Institute Observation)
Tilautha	Baragaon	3.05	90.00	16.4.02	15.10.02	Good quality. Very good condition
Bachhauni	Babina	2.95	74.57	16.4.02	15.10.02	Good Quality and Good Condition
Koltora	Guru Sarai	8.85	144.00	4.9.04	3.6.05	Quality not good and Condition very poor
Shahpura	Guru Sarai	4.80	92.05	26.8.04	25.5.05	Quality not good. Condition not good
Gorpura	Guru Sarai	4.10	81.74	26.8.04	25.5.05	Quality not good. Condition not good
Ghanghori	Bangara	4.45	87.36	26.8.04	28.5.05	Quality not good. Condition not good
Punauli Khurd	Babina	3.10	53.68	23.2.06	22.2.07	Quality not good. Condition not good
Dimrauni	Badagaon	3.30	78.70	23.2.06	22.2.07	Quality Good. Condition Good

Note: Maintenance is being done only on Ghaghori road but it is not satisfactory.

Control Villages: (i) Bugwari (Bangra Block) – Connectivity required is around 4.00 kms. Although road is proposed under PMGSY the forest department is not issuing the No Objection Certificate. The area, however, is very backward and road is urgently required.

(ii) Sajera (Bangra Block) – Connectivity required is around 3.00 kms. Although not originally on the PMGSY list, is now being considered for inclusion.

The control villages selected by us were Bugwari and Sajera both from Bangra Block. Under the PMGSY this road is listed for construction but the problem being faced is that the road passes through a stretch under the forest department but they are not giving the No Objection Certificate for its construction. The area however is very backward and road is urgently required. In the case of Sajera, it is not in the list of selected villages under PMGSY initially but is now being considered for inclusion.

**(i) Brief Profile of Selected Villages**

The details regarding number of households, population, literacy and average size of the household is given in Table 3.2. There is a wide variation among the villages with respect to population, literacy rates among males and females as well as the average size of the household as is quite evident from the table. Literacy levels are extremely low among both males and females in Punavali while male literacy is highest in Tiletha Buzurg. Except for one village where the average household size was below 5, in as many as five villages the average household size exceeded 7.

**Table 3.2: Details about Village habitation (Selected Villages)**

Details	Tiletha Bujurg	Bachauni	Punavli	Turkalhachura	Shahpurakhurd	Gorpura	Khajraha Dhandhari	Dimrauni
Total Households	280	345	344	450	347	228	133	154
Total Population	2500	2300	2430	2700	1550	1685	940	1200
Male	1300	1260	1317	1400	870	960	510	633
Female	1200	1040	1113	1300	680	725	430	567
<b>Literacy (%)</b>								
Male	70.00	46.00	29.00	60.00	67.00	41.00	52.00	54.00
Female	30.00	40.00	26.00	46.15	37.00	26.00	33.00	45.00
Avg HH Size	8.93	6.67	7.06	6.00	4.47	7.39	7.07	7.79

If we look at figures pertaining to land owned, cultivated and irrigated area once again wide variations are observed according to the size of the villages. Levels of irrigation were low in Bachauni and Shahpur Khurd. In the case of Dimrauni the net area sown last year was extremely low because of the drought conditions which had been prevailing for the last 2-3 years. The table reveals that the main source of irrigation in these villages are wells. But the problem faced by cultivators is that because of the drought a large number of these wells have dried up and agricultural production has received a setback (for details see Table 3.3).

Table 3.3 Details about Land (Selected Villages)

Details	Tiletha Bujurg	Bachauni	Punavli	Turkalhachura	Shahpurakhurd	Gorpura	Khajraha Dhandhari	Dimrauni
Total Area (acre)	704	3398	667	5000	453	2124	520.25	1149
Net Sown Area (acres)*	498 (70.74)	1897 (55.83)	596 (89.36)	4000 (80.00)	410 (90.50)	1725 (81.21)	360 (69.20)	331 (28.81)
Net Irrigated Area (Acres)**	316 (63.45)	489 (25.78)	249 (41.78)	2000 (50.00)	100 (24.39)	1725 (100.00)	315 (87.50)	261 (78.85)
Source of Irrigation								
Private Tubewells (Nos)	20	0	0	0	0	0	0	6
Govt Tubewells (Nos)	0	0	0	0	0	0	0	0
Canal (kms)	0	0	0	0	1.5	5	0	0
Others (Wells)	50	200	102	90	25	50	250	40

\* Figure in brackets indicate the percentage of net area sown to total area

\*\* Figure in brackets indicate the percentage of net irrigated area to net area sown

The distribution of workers in the selected districts finds a lesser number engaged in agriculture than anticipated. This is because conditions of drought prevailing over the last couple of years have forced the workers to seek employment elsewhere. As people are not very educated they have to fall back upon becoming non-agricultural wage earners (Table 3.4).

Table 3.4: Category wise Distribution off Workers (% Share)

Details	Tiletha Bujurg	Bachauni	Punavli	Turkalhachura	Shahpurakhurd	Gorpura	Khajraha Dhandhari	Dimrauni
Cultivator	47.02	50.00	50.55	49.20	46.22	40.40	34.15	50.26
Non-Agricultural Labour	31.35	24.12	33.00	32.00	42.34	27.72	8.76	21.74
Animal Husbandry	15.67	25.00	7.38	9.98	9.00	20.79	33.27	9.08
Mining	1.25	0.00	3.82	0.00	0.00	1.19	0.00	6.10
Small Industry	0.00	0.00	0.48	0.00	0.00	1.19	4.55	0.00
Other Industries	0.00	0.00	0.00	0.00	1.22	0.40	0.00	0.35
Construction	2.51	0.00	1.67	1.19	0.00	4.95	12.26	5.00
Business	0.00	0.59	0.24	1.49	1.22	2.97	7.01	2.61
Transport and Communication	0.31	0.29	0.24	0.20	0.00	0.40	0.00	0.00
Others	1.88	0.00	2.63	5.95	0.00	0.00	0.00	4.84
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

After the construction of a road under PMGSY five villages have had the benefit of a primary school being constructed within the village. No other activity offering other educational, medical or facilities like private clinic, bus station, bank branch, etc. have come up as a result of the road. Here it is worth pointing out that some of these facilities are provided following some norms such as minimum population etc. and so the villages might not have been eligible under the norms.

Not much of commercial activity has sprung up in our selected villages as a result of road construction. The one change which can be viewed however is in the increase in some

shops and tailoring activity. Besides this few cycle repair shops have been opened by some villagers. While the roads provide various facilities as a result of increased mobility one should not expect spectacular changes taking place in these small villages in a short time span. We may therefore treat these additions to commercial activity as an indicator of improvement which is likely to follow as time passes and situation improves further. The persistent drought conditions might also have contributed towards the pace of commercial activity being low (Table 3.5).

**Table 3.5: Details about Commercial Facilities (Selected Villages)**

Details	Before PMGSY							
	Tiletha Bujurg	Bachauni	Punavli	Turkalhachura	Shahpurakhurd	Gorpura	Khajraha Dhandhari	Dimrauni
Tea Shop	0	0	0	0	0	0	0	5
Sweet Shop	0	0	1	0	0	0	0	0
General Shop	2	3	11	10	4	4	10	5
Cycle Repair Shop	0	1	0	4	0	0	3	0
Scooter/Motor Cycle Repair Shop	0	0	0	0	0	0	0	0
Tailor	0	0	1	3	4	3	3	1
Industrial enterprises	0	0	0	0	0	0	0	0
Others	5	0	1	3	0	9	5	3
Details	After PMGSY							
	Tiletha Bujurg	Bachauni	Punavli	Turkalhachura	Shahpurakhurd	Gorpura	Khajraha Dhandhari	Dimrauni
Tea Shop	0	0	0	0	0	0	0	5
Sweet Shop	0	0	1	0	0	0	0	0
General Shop	8	7	13	15	7	15	10	11
Cycle Repair Shop	1	1	1	6	0	0	3	0
Scooter/Motor Cycle Repair Shop	0	0	1	0	0	0	0	0
Tailor	1	0	1	4	4	3	4	1
Industrial enterprises	0	0	0	0	0	0	0	0
Others	5	0	2	5	0	13	5	3
Details	Change							
	Tiletha Bujurg	Bachauni	Punavli	Turkalhachura	Shahpurakhurd	Gorpura	Khajraha Dhandhari	Dimrauni
Tea Shop	0	0	0	0	0	0	0	0
Sweet Shop	0	0	0	0	0	0	0	0
General Shop	6	4	2	5	3	11	0	6
Cycle Repair Shop	1	0	1	2	0	0	0	0
Scooter/Motor Cycle Repair Shop	0	0	1	0	0	0	0	0
Tailor	1	0	0	1	0	0	1	0
Industrial enterprises	0	0	0	0	0	0	0	0
Others	0	0	1	2	0	4	0	0

The construction of an all-weather road has had a definite impact on the increase in privately owned vehicles. Motorized vehicles such as scooters/motor cycles, cars/jeeps, and tractors have gone up in all villages. Even vehicles such as cycles and bullock/dunlop carts have registered an increase (see Table 3.6). But if we see the public mode of transport such as buses then not much has changed over the years. But then the opening of a bus station is constrained by adequacy of regular passengers and the other priorities of the state roadways department and so an all-weather road by itself does not ensure sanction of a bus station.

The average distance which the villagers have to cover in order to avail facilities such as catching a bus, attending schools or colleges, visiting the PHC, CHC or other public and private health facilities, post office and banks we do not find any change in villages at present as compared to the time when the villages did not have an all-weather road. The only improvement in some villages however is seen in the fact that some increase in the use of motorized vehicles has taken place. The distance of main facilities from the village have been given in Annexure 3.1 at the end of the chapter.

Table 3.6: Details about Private Vehicles (Selected Villages)

Details of Vehicles		Selected Villages							
		Tilaitha	Bachhauni	Punauli Khurd	Kottora	Shahpura	Gorpura	Ghanghari	Dimrauni
Cycle	Before PMGSY	37	72	210	65	40	45	45	70
	After PMGSY	40	85	250	100	50	80	70	90
Motor Cycle/ Scooter	Before PMGSY	6	8	12	9	2	2	12	23
	After PMGSY	22	32	14	12	6	12	16	25
Car/Jeep	Before PMGSY	0	0	0	1	0	0	0	0
	After PMGSY	4	1	1	4	0	4	4	2
Tractor	Before PMGSY	10	6	6	10	7	0	0	25
	After PMGSY	13	12	6	12	15	0	0	31
Bus/Truck/Matador	Before PMGSY	0	0	0	0	0	0	0	0
	After PMGSY	5	0	0	0	0	0	0	0
Bullock Cart/Dunlop Cart	Before PMGSY	5	10	0	6	30	100	11	7
	After PMGSY	18	16	0	16	80	200	25	8
		Change							
Cycle		3	13	40	35	10	35	25	20
Motor Cycle/Scooter		16	24	2	3	4	10	4	2
Car/Jeep		4	1	1	3	0	4	4	2
Tractor		3	6	0	2	8	0	0	6
Bus/Truck/Matador		5	0	0	0	0	0	0	0
Bullock/Dunlop Cart		13	6	0	10	50	100	14	1

## (ii) Brief Profile of the Control Villages

The two control villages selected were Bagwari and Sajera both from Bangra block of the district. Both had a total population of around 1500 and the average size of the household was quite high at 7.75 and 8.08 in Bagwari and Sajera respectively. The literacy percentage among people was extremely low with only around one-fourth males being literate. The situation among females was even worse. Female literacy was as low as around 15 per cent in Bagwari (see Table 3.7).

Table 3.7: Details about Control Villages

Details	Bagwari	Sajera
Block	Bangara	Bangara
Village/Habitation	Bagwari	Sajera
Details about Village/Habitation	Bagwari	Sajera
Total Households	200	185
Total Population	1550	1495
Male	813	786
Female	737	709
Literacy (%)		
Male	24.97	27.74
Female	14.93	21.86
Avg HH Size	7.75	8.08

The net area sown as a percentage of total area was as high as around 90 per cent in Sajera but was only round 56 per cent in Bagwari. The irrigated area was 65 and around 60 per cent of net area sown in Bagwari and Sejera respectively. The single source of irrigation in both villages was wells which had suffered as a result of the drought conditions prevailing since the last couple of years (Table 3.8).

Table 3.8: Details of Cultivated Land

Details	Bagwari	Sajera
Total Area (acre)	360	525
Net Sown Area (acres)*	200 (55.56)	473 (90.44)
Net Irrigated Area (Acres)**	130 (65.00)	282 (59.62)
Source of Irrigation		
Private Tubewells (Nos)	0	0
Govt Tubewells (Nos)	0	0
Canal (kms)	0	0
Others (Wells)	60	67

\* Figure in brackets indicate the percentage of net area sown to total area

\*\* Figure in brackets indicate the percentage of net irrigated area to net area sown

Even in our control villages drought conditions have forced persons to become non-agricultural labourers and work in construction and other activities. The percentage share of workers has been shown in Table 3.9.

Table 3.9: Category wise Distribution off Workers (% Share)

Details	Present Situation	
	Bagwari	Sajera
Cultivator	56.04	47.34
Non-Agricultural Labour	22.49	36.16
Animal Husbandry	2.49	4.61
Mining	0.37	0.00
Small Industry	0.00	0.00

Table 3.9 (contd...)

Other Industries	0.00	0.00
Construction	6.23	3.30
Business	1.25	0.00
Transport and Communication	0.00	0.00
Others	11.13	8.59
Total	100.00	100.00

The only facility available in the village by way of educational, health and banking, etc. was that a primary school is located in each village (Table 3.10).

Table 3.10: Details of facility available in Control Villages

Details	Bagwari	Sajera
Primary Schools	V	V
Upper Primary School	--	--
PHC	--	--
Private Clinic	--	--
Bank Branch	--	--
Bus Station	--	--

Even from the point of view of commercial activity the villages were quite backward and except for a few general type of shops there was no activity at present and hardly any change when compared to the situation a few years earlier. In fact the villages did not have repair shops, tailors or other commercial establishments (Table 3.11).

Table 3.11: Details of Commercial Activities

Details of Commercial Activities	2-3 Years Earlier		Present Situation		Change	
	Bagwari	Sajera	Bagwari	Sajera	Bagwari	Sajera
Tea Shop	0	0	0	0	0	0
Sweet Shop	0	0	0	0	0	0
General Shop	4	2	7	2	3	0
Cycle Repair Shop	0	0	0	0	0	0
Scooter/Motor Cycle Repair Shop	0	0	0	0	0	0
Jeep/Car/Tractor repair Shop	0	0	0	0	0	0
Agricultural Implements Shop	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	0	0	0	0
Electronic Shop	0	0	0	0	0	0
TV/Radio Repair Shop	0	0	0	0	0	0
Tailor	0	0	0	0	0	0
Industrial enterprises	0	0	0	0	0	0
Others	0	0	0	0	0	0

Despite the fact that the villages do not have a proper link road and the length of all weather road required is approximately 4 and 3 kms in Bagwari and Sejera respectively, there has been some increase in the privately owned vehicles in the past 2-3 years. However, the increase is very

nominal in terms of motorized vehicles as can be seen from Table 3.12. In Sajera scooters/motor cycles have gone up from 2 to 5 and one additional tractor has been purchased.

**Table 3.12: Details of Privately Owned vehicles**

Details of Vehicles		Control Villages	
		Bugwari	Sajera
Cycle	2-3 Years Before	32	28
	Present Situation	44	39
Motor Cycle/Scooter	2-3 Years Before	1	2
	Present Situation	1	5
Car/Jeep	2-3 Years Before	0	0
	Present Situation	1	0
Tractor	2-3 Years Before	1	1
	Present Situation	1	2
Bus/Truck/Matador	2-3 Years Before	0	0
	Present Situation	0	0
Bullock Cart/Dunlop Cart	2-3 Years Before	8	12
	Present Situation	8	40
<b>Change</b>			
Cycle		12	11
Motor Cycle/Scooter		0	3
Car/Jeep		1	0
Tractor		0	1
Bus/Truck/Matador		0	0
Bullock/Dunlop Cart		0	28

In the last few years there has also been no difference in the average distance which villagers have to travel for availing facilities such as education and health, market, cooperative society, bank, post office, etc. The only facility which is now available within the village is the opening up of a private clinic whereas 2-3 years earlier the villagers had to cover a distance of over 5 kms to seek the services of a private doctor. For all details please see Annexure 3.2 at the end of the chapter.

## **B. ANALYSIS OF DATA EMERGING FROM HOUSEHOLD SURVEY OF SELECTED VILLAGES**

### **(i) General Information**

As has already been indicated 30 households were selected from each village. Twenty were cultivating households which were divided into three categories according to size of land holding and their primary occupation was agriculture. The remaining ten were those who were classified as non-cultivating households since their primary occupation was not agriculture even though they might have land which is being cultivated as well.

Information obtained about the respondents with respect to their caste categories, average age, education and occupation were collected and are presented in Table 3.13. Among the

cultivating households around half belonged to OBC category whereas among non-cultivating households an equal proportion belonged to the OBC and SC/ST category. Levels of education were low since around 28 per cent respondents were illiterates while another 10 per cent were barely literate. One-third had studied upto the primary level. Only around 6 per cent were graduates or post-graduates while the primary occupation of all cultivating respondents was agriculture, the primary occupation among non-cultivating households varied but the maximum share was of those who were manufacturing some product.

Table 3.13: Details about Respondents

Details	Cultivating Households	Non Cultivating Households	Total
<b>Caste</b>			
General	37 (23.13)	14 (17.50)	51 (21.25)
OBC	81 (50.63)	33 (41.25)	114 (47.50)
SC/ST	42 (26.25)	33 (41.25)	75 (31.25)
Total	160 (100.00)	80 (100.00)	240 (100.00)
<b>Average Age</b>	46.97	41.44	45.13
<b>Education</b>			
Illiterate	48 (30.00)	19 (23.75)	67 (27.92)
Literate	18 (11.25)	6 (7.50)	24 (10.00)
Upper Primary	55 (34.38)	26 (32.50)	81 (33.75)
HS/Inter	31 (19.38)	22 (27.50)	53 (22.08)
Graduation	7 (4.38)	6 (7.50)	13 (5.42)
Post Graduation	1 (0.63)	1 (1.25)	2 (0.83)
Total	160 (100.00)	80 (100.00)	240 (100.00)
<b>Occupation</b>			
Agriculture	160 (100.00)	0 (0.00)	160 (66.67)
Shop	0 (0.00)	19 (23.75)	19 (7.92)
Self Employment	0 (0.00)	24 (30.00)	24 (10.00)
Manufacturing	0 (0.00)	28 (35.00)	28 (11.67)
Job	0 (0.00)	9 (11.25)	9 (3.75)
Total	160 (100.00)	80 (100.00)	240 (100.00)

Detailed information about the numbers of the households revealed that the share of males and females was 55 and 45 per cent respectively. Slightly over one-third were concentrated in the age group of 15-35 years while another one-third were children below 15 years. Around 28 per cent were illiterates but the maximum number (41 per cent) constituted of those who had studied upto the primary level. It was good to see that around 12 per cent had obtained technical education although the number of those who were graduates or post-graduates was low. Workers constituted nearly 41 per cent of the total population. As can be expected the primary occupation of the working members of the households was predominantly agriculture while their secondary occupation was working as non-agricultural labourers. Among the non-cultivating households the primary occupation was not heavily concentrated into any specific occupation (Table 3.14).

Table 3.14: Details about Households

Details	Cultivating Households	Non Cultivating Households	Total
<b>Sex</b>			
Male	609 (55.21)	254 (55.46)	863 (55.29)
Female	494 (44.79)	204 (44.54)	698 (44.71)
Total	1,103 (100.00)	458 (100.00)	1,561 (100.00)
<b>Age Structure</b>			
0-15	355 (32.18)	157 (34.28)	512 (32.80)
15-35	376 (34.09)	171 (37.34)	547 (35.04)
35-60	275 (24.93)	92 (20.09)	367 (23.51)
Above 60	97 (8.79)	38 (8.30)	135 (8.65)
Total	1,103 (100.00)	458 (100.00)	1,561 (100.00)
<b>Education Status</b>			
Illiterate	316 (28.56)	119 (25.98)	435 (27.80)
Literate	38 (3.45)	19 (4.15)	57 (3.65)
Upper Primary	451 (40.89)	185 (40.39)	636 (40.74)
HS/Inter	127 (11.51)	62 (13.54)	189 (12.11)
Graduation	37 (3.35)	9 (1.97)	46 (2.95)
Post Graduation	6 (0.54)	2 (0.44)	8 (0.51)
Others	128 (11.60)	62 (13.54)	190 (12.17)
Total	1,103 (100.00)	458 (100.00)	1,561 (100.00)

Table 3.14 (contd...)

<b>Working Status</b>			
Child	129	62	191
	(11.70)	(13.54)	(12.24)
Student	277	115	392
	(25.11)	(25.11)	(25.11)
Working	438	198	636
	(39.71)	(43.23)	(40.74)
Unemployed	0	1	1
	(0.00)	(0.22)	(0.06)
Housewife	209	59	268
	(18.95)	(12.88)	(17.17)
Pensioner	3	1	4
	(0.27)	(0.22)	(0.26)
Old	47	22	69
	(4.26)	(4.80)	(4.42)
Total	1,103	458	1,561
	(100.00)	(100.00)	(100.00)
<b>Main Occupation</b>			
Agriculture	351	54	405
	(80.28)	(26.77)	(63.56)
Agriculture Labour	4	7	11
	(0.92)	(3.54)	(1.74)
Non Ag Labour	33	24	57
	(7.57)	(12.12)	(8.99)
Shop/Business	5	30	35
	(1.15)	(15.15)	(5.52)
Manufacturing	2	45	47
	(0.46)	(22.73)	(7.41)
Job	35	14	49
	(8.03)	(7.07)	(7.73)
Service	1	18	19
	(0.23)	(9.09)	(3.00)
Others	6	7	13
	(1.38)	(3.54)	(2.05)
Total	437	199	636
	(100.00)	(100.00)	(100.00)
<b>Secondary Occupation</b>			
Agriculture	20	72	92
	(19.05)	(67.92)	(43.60)
Agriculture Labour	16	14	30
	(15.24)	(13.21)	(14.22)
Non Ag Labour	63	15	78
	(60.00)	(14.15)	(36.97)
Shop/Business	4	3	7
	(3.81)	(2.83)	(3.32)
Manufacturing	1	1	2
	(0.95)	(0.94)	(0.95)
Service	0	1	1
	(0.00)	(0.94)	(0.47)
Others	1	0	1
	(0.95)	(0.00)	(0.47)
Total	105	106	211
	(100.00)	(100.00)	(100.00)

The average size of land holding in Jhansi were higher as compared to Rae Bareli.

## (ii) Agricultural Situation and Livestock Ownership

Taking all the three categories of land-owning households the overall size of land holding was 4.86 acres which was relatively higher as compared to Rae Bareli and around 90 per cent was under cultivation. Out of the total cultivated land 89 per cent was irrigated but the fact must be kept in mind that the main source of irrigation is wells of which a large number have actually dried up because of the drought conditions since the last few years (Table 3.15).

Table 3.15: Details of Land Holding (Acres)

Details	Below 2.5	2.5 to 5.0	Above 5.0	Total
Avg Overall Land Holding	1.58	4.07	10.82	4.86
Average Size of Cultivation	(97.46)1.54	(89.68)3.65	(86.97)9.41	(90.33)4.39
Average Size of Irrigation	(99.35)1.53	(90.41)3.30	(86.08)8.10	(89.07)3.91

The main crops grown in the area are wheat, pulses and oilseeds. However, if we compare the average area under the different crops in the present situation then a decline is found in all crops except for mustard primarily because of the drought condition. The cultivators have stopped growing rice altogether. In some crops no change is found but the average area is negligible at both points of time (Table 3.16).

Table 3.16: Average Area Under Each Crop Per HH (Acres)

Crops	Before PMGSY				After PMGSY			
	Below 2.5	2.5 to 5.0	Above 5.0	Total	Below 2.5	2.5 to 5.0	Above 5.0	Total
Wheat	1.28	1.96	4.37	2.71	0.46	0.80	3.26	1.65
Paddy	0.00	0.01	0.06	0.03	0.00	0.00	0.00	0.00
Maize	0.16	0.26	0.49	0.32	0.11	0.16	0.39	0.23
Arhar	0.00	0.03	0.03	0.02	0.00	0.01	0.05	0.02
Urd	0.79	0.87	2.18	1.35	0.61	0.73	1.94	1.16
Chana	0.55	0.77	1.64	1.04	0.20	0.52	0.86	0.57
Other Pulses	0.53	0.67	1.89	1.10	0.44	0.52	1.41	0.84
Other Food grains	0.29	0.31	0.93	0.54	0.29	0.28	0.92	0.53
Mustard	0.13	0.40	0.89	0.52	0.18	3.68	0.68	1.66
Other Oilseeds	0.98	2.10	4.07	2.57	1.04	1.89	3.52	2.30
Vegetables	0.00	0.06	0.02	0.03	0.00	0.08	0.01	0.03

Not only have drought conditions adversely affected area under the crops but it has also affected the productivity of different crops. In fact across all land holding size categories a decline in productivity is witnessed for all crops even if the decline is marginal (Table 3.17). The only crops with marginal increase are maize and other pulses.

Table 3.17: Crop-wise Productivity (Qtl/Acres)

Crops	Before PMGSY				After PMGSY			
	Below 2.5	2.5 to 5.0	Above 5.0	Total	Below 2.5	2.5 to 5.0	Above 5.0	Total
Wheat	8.53	8.69	8.15	8.34	7.36	7.89	7.54	7.60
Paddy	0.00	2.40	4.00	3.80	0.00	0.00	0.00	0.00
Maize	4.80	4.40	3.78	4.09	4.67	4.79	4.06	4.32
Arhar	0.00	2.27	2.00	2.11	0.00	3.20	2.00	2.17
Urd	5.24	2.29	2.15	2.64	1.96	1.65	1.74	1.75
Chana	3.18	4.87	3.21	3.66	2.38	2.53	3.65	3.16
Other Pulses	4.39	3.44	3.51	3.60	3.12	4.30	4.11	4.02
Other Foodgrains	4.52	4.38	3.89	4.08	3.32	3.28	3.14	3.19
Mustard	2.97	2.53	2.70	2.66	2.20	0.17	2.66	0.62
Other Oilseeds	2.63	2.36	2.61	2.54	2.28	2.51	1.99	2.18
Vegetables	0.00	2.66	5.00	3.18	0.00	2.81	6.00	3.13

As a result of the drought conditions and lower levels of production the proportion of sale to total production has registered a decline in all cereals over the last few years. Among pulses are concerned there is a marginal increase except in the case of Chana. Similarly even in oilseeds the proportions of sales have gone up. This is obvious because after setting aside the cereals for domestic consumption the marketable surplus must have declined because of lower levels of production. However, in the case of other crops the cultivators have sold more of the produce in order to sustain the households (Table 3.18).

Table 3.18: Crop-Wise Sale as Percent to Output

Crops	Before PMGSY				After PMGSY			
	Below 2.5	2.5 to 5.0	Above 5.0	Total	Below 2.5	2.5 to 5.0	Above 5.0	Total
Wheat	18.74	39.07	63.37	51.22	14.18	8.71	61.67	32.51
Paddy	0.00	0.00	61.43	56.58	0.00	0.00	0.00	0.00
Maize	43.33	68.86	56.83	58.80	33.33	74.73	61.26	61.42
Arhar	0.00	58.82	75.00	67.57	0.00	62.50	83.33	78.95
Urd	87.31	175.19	84.49	104.02	71.61	239.10	103.68	128.59
Chana	82.25	51.24	81.06	70.40	75.81	79.25	52.80	61.43
Other Pulses	84.20	83.56	86.13	85.29	85.52	92.89	61.69	71.70
Other Foodgrains	73.08	51.25	76.82	70.45	43.59	36.11	71.12	60.09
Mustard	42.48	67.39	69.92	67.34	56.07	66.04	74.21	70.58
Other Oilseeds	79.67	85.59	91.05	88.40	88.39	92.10	90.87	91.01
Vegetables	0.00	21.51	60.00	34.97	0.00	71.15	33.33	63.90

The drought conditions which have prevailed recently have also forced the cultivators to reduce use of chemical fertilizers, etc. The cost of production per acre has gone down by around 11 per cent. This decline is clearly visible in all land holding categories of cultivators in our sample (Table 3.19).

Table 3.19: Cost of Production (rupees)

Details	Per Acre Cost of Prod	
	Before PMGSY	After PMGSY
Below 2.5	4342	3300
2.5 to 5.0	3684	3119
Above 5.0	3340	3167
Total	3568	3170

Although droughts may have affected crop yields but prices have increased over the years and so value of crops per quintal have registered some increase in most crops (see Table 3.20).

Table 3.20: Crop Wise Value (Rs/Qtl)

Crops	Before PMGSY				After PMGSY			
	Below 2.5	2.5 to 5.0	Above 5.0	Total	Below 2.5	2.5 to 5.0	Above 5.0	Total
Wheat	579	631	652	626	658	642	687	652
Paddy	0	560	583	570	0	0	0	0
Arhar	0	1768	1732	1747	0	1844	1841	1842
Urd	995	894	1014	965	1265	1214	1436	1311
Chana	688	1035	1130	984	380	857	1065	817
Other Pulses	898	1125	1503	1212	886	1349	1545	1308
Other Foodgrains	492	499	495	493	537	549	542	540
Mustard	380	548	758	586	432	554	758	601
Other Oilseeds	1708	2536	2370	2266	2478	3273	3445	3140
Vegetables	0	610	621	619	0	742	734	736

In the case of Jhansi livestock ownership per household is relatively higher as compared to Rae Bareli. This is partly to compensate incomes from agriculture which are relatively lower because of the typical terrain and drought conditions. People rear goats and sheep as they need relatively less care and can survive under difficult conditions as well. However, if we compare the ownership pattern prior to construction of road and afterwards there has not been much change. The average ownership of cows and buffaloes has registered a marginal increase while the average number of goats and sheep owned per household has declined (Table 3.21).

Table 3.21: Details of Livestock Ownership (average Number)

Details	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
Cow	1.75	1.18	1.58	1.74	1.33	1.61
Buffalo	2.01	1.79	1.97	2.28	1.63	2.15
Bullocks	1.97	1.84	1.94	1.70	1.68	1.70
He-Buffalo	1.00	0.50	0.78	1.60	1.50	1.56
Young Stock	1.55	1.00	1.40	2.05	1.35	1.86
Goats	6.39	4.59	5.81	4.97	3.10	4.37
Sheep	30.20	0.00	30.20	26.50	0.00	26.50

### (iii) Income of the Households

The different sources of household earnings and income from each individual source is given in Table 3.22. Despite the depressed state of agriculture because of drought conditions the price escalations has ensured that the share of this sector contributes maximum towards the total household incomes. However, if we look at the share presently as compared to a few years earlier the share of agriculture has declined from around 66 to around 64 per cent. Sale of milk and milk products is now contributing more to incomes of the households but the income from sale of meat and animals has declined over the years. By virtue of the roads having been constructed under PMGSY household incomes from wage earnings and other economic activities have registered an increase. The general pattern remains similar to Rae Bareli in the sense that the agricultural households enjoy a relatively higher income as compared to non-agricultural households. The average household incomes of agricultural households went up considerably from around Rs.39 thousand earlier to Rs.61 thousand at present whereas among non-cultivating households the corresponding increase was from around Rs.25 to Rs.35 thousand. If we take all the households together it is found that household incomes have gone up by approximately 50 per cent over the years.

Table 3.22: Average Income from All Sources Per Household (Rupees)

Average Income from Different Sectors	Before PMGSY			After PMGSY			Change in Income %		
	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total
Agriculture	26189	7845	20074	39216	7748	28726	50	-1	43
	(65.74)	(31.88)	(57.75)	(64.01)	(22.15)	(54.71)			
Animal Husbandry	4886	1207	3659	7909	2799	6206	62	132	70
	(12.26)	(4.91)	(10.53)	(12.91)	(8.00)	(11.82)			
Other Products of Animal Husb	2353	1924	2210	2073	808	1651	-12	-58	-25
	(5.91)	(7.82)	(6.36)	(3.38)	(2.31)	(3.15)			
Wages	1985	3364	2445	4342	4825	4503	119	43	84
	(4.98)	(13.67)	(7.03)	(7.09)	(13.79)	(8.58)			
Other eco. Activities	1632	9713	4325	2367	17553	7429	45	81	72
	(4.10)	(39.47)	(12.44)	(3.86)	(50.17)	(14.15)			
Other Sources	2791	556	2046	5354	1254	3987	92	125	95
	(7.01)	(2.26)	(5.89)	(8.74)	(3.58)	(7.59)	39	42	40
Avg. Per HH Income	39836	24610	34760	61261	34987	52503	54	42	51

To see details regarding change in income from sale of milk products, sale of other animal husbandry products, other economic activities and other sources are given in Annexures 3.3, 3.4, 3.5 and 3.6 at the end of the chapter.

#### (iv) Employment Generation Among Wage Labourers

If we look at average number of days for which wages were available in agricultural and non-agricultural activities. One thing which emerges is that males are working for much longer duration than their female counterparts. For example average days of employment among male agricultural wage earners were 71 days but among females it was only 52. However, if we look at employment generation prior to the construction of the road and the present situation it is found that number of male wage earners in non-agricultural sector have gone up considerably particularly from the cultivating households since agricultural production has received a setback because of drought conditions. Even among non-cultivating households the increase is substantial. These numbers could increase to some extent because the all-weather road has improved mobility among all the villagers. There has also been some increase in the average days of employment among the males who are engaged as wage earners in this sector. In agriculture on the other hand there is not much change either in total numbers or in the average number of days of employment (for details please see Table 3.23). As a result of the number of wage earners increasing and some increase in average days of employment the earnings of the household from this sector has registered an increase as has already been indicated in Table 3.23 earlier.

Table 3.23: Person Days Employed by Labourers and Income

Details	Before PMGSY			After PMGSY		
	Cult. HH	Non Cult HH	Total	Cult. HH	Non Cult HH	Total
<b>Ag Labour Male</b>						
Number	13	20	33	13	18	31
Avg No of Days	71	68	69	78	71	74
<b>Ag Labour Female</b>						
Number	12	9	21	12	9	21
Avg No of Days	52	73	61	54	67	60
<b>Non Ag Labour Male</b>						
Number	61	32	93	193	116	309
Avg No of Days	93	129	106	112	133	126
<b>Non Ag Labour Female</b>						
Number	4	2	6	6	3	9
Avg No of Days	45	85	58	60	82	67
<b>Total</b>						
Number	90	63	153	105	60	165
Avg No of Days	82	100	90	106	105	106

#### (v) Marketing of Various Products

It is expected that availability of an all-weather road will bring a positive impact on the marketing arrangements of products of different sectors. This picture has been captured in

Table 3.24. In our selected villages it is seen that agricultural produce was mainly sold in the Haat which is located beyond 3 kms. even before the all-weather road was constructed. As a result there is not much change in the selling arrangements of agricultural produce even after road construction. However, with respect to products of the animal husbandry and manufacturing sector a higher proportion are now being sold in Haats outside the village after the road was constructed. The share of these two sectors sold in Haats increased from 47 to 56 per cent in the case of animal husbandry and from 55 to 60 per cent in manufacturing sector respectively. The people are able to get more remunerative prices in the Haats and so a higher proportion is being sold in those markets and the household incomes from these sectors have therefore registered an increase.

Table 3.24: Details Regarding Marketing of Products (in Percentage)

Details	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Agriculture produce</b>						
Within village	9	24	13	8	19	15
Nearest Haat (with in 3 kms)	1	2	1	2	4	3
Haat beyond 3 kms	90	74	86	90	77	86
<b>Animal Husbandry Product</b>						
Within village	60	53	66	53	43	44
Nearest Haat (with in 3 kms)	9	11	5	13	11	13
Haat beyond 3 kms	31	36	29	34	46	43
<b>Manufacturing</b>						
Within village	65	48	45	40	40	40
Nearest Haat (with in 3 kms)	0	2	6	0	2	2
Haat beyond 3 kms	35	51	49	60	58	58
<b>Others</b>						
Within village	100	0	40	100	0	60
Nearest Haat (with in 3 kms)	0	50	40	0	50	20
Haat beyond 3 kms	0	50	20	0	50	20

(vi) **Ownership of Assets Among the Households**

The assets generally found in the possession of our households include agricultural implements, vehicles and household durables. As has been indicated earlier, agriculture in the district has faced a setback because of the drought conditions which have prevailed over the last 3-4 years. This is even reflected in the ownership pattern of agricultural implements among our households. Whether we look at ploughs or tractors the numbers have shown a declining trend. However, since the overall income levels have increased the people are relatively better placed to purchase vehicles. An increase is therefore witnessed in the ownership pattern of cycles,

scooters/motor cycles and four wheelers. Similarly the people have invested higher amounts on the acquisition of household durables (for details please see Table 3.25).

Table 3.25: Details about Assets (Average Number)

Details	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Ag Implements</b>						
Plough	1.17	1.09	1.15	0.99	0.89	0.97
Bullock cart	0.99	1.00	0.99	0.77	0.83	0.78
Tractor	0.95	0.80	0.93	0.95	1.00	0.95
Chaff Cutter	0.99	1.00	0.99	0.98	1.00	0.98
Others	1.10	1.29	1.13	1.28	1.36	1.29
<b>Means of Transport</b>						
Cycle	1.01	0.95	0.99	1.12	1.00	1.08
motor Cycle	0.79	0.42	0.70	0.98	1.00	0.98
Jeep	0.00	0.00	0.00	1.00	1.00	1.00
Others		0.00	0.00		1.00	1.00
<b>Non Ag Implements</b>						
Flour/Rice Mill	1.00	0.80	0.83	0.00	1.00	0.83
Oil Ghani		1.00	1.00		1.00	1.00
Others		4.00	4.00		5.00	5.00
<b>Household Assets</b>						
Radio	0.94	0.86	0.91	0.95	0.98	0.96
TV	0.62	0.64	0.62	1.05	1.00	1.04
Telephone	0.00	0.33	0.29	1.00	1.17	1.14
Mobile	0.33	0.29	0.32	1.11	1.00	1.08
Others	1.00	1.00	1.00	1.00	1.50	1.33
<b>Total</b>	<b>0.91</b>	<b>0.83</b>	<b>0.89</b>	<b>1.04</b>	<b>1.01</b>	<b>1.03</b>

**(vii) Saving in Travel Time as a result of the All-weather Road**

Time taken in traveling has been calculated before and after road construction for taking their produce by villagers to the Haats for sale. The figures obtained through our field survey clearly highlight the fact that time taken to reach the market has been reduced irrespective of the means of transportation that the villagers may be using (for details see Table 3.26).

Table 3.26: Time in Transportation (in Minutes)

Details	Before PMGSY	After PMGSY
Cycle	59	41
Bullock Cart	60	35
Tempo	44	25
Tractor	45	30
Jeep	20	13
Truck	25	15

**(viii) Emergence of New Activities Initiated among the Households**

It is expected that the construction of an all-weather road would led to emergence f new activities within the village. However, in the case of our villages only 22 households in all have

reported the initiation of some new activity of majority of these (16 households) belong to the non-agricultural household category. Mainly new activities are in the form of small shops or establishments which have been set up. The other two although to a lesser extent are those which bear a direct relationship with the development of the road. They are the transport and repair and maintenance activities. Besides this there are single cases of a tailor shop coming up and one individual who has started a dairy (Table 3.27). Since only a few years have passed after road construction it is hoped that it will take some more time before a positive impact can be felt in the villages.

Table 3.27: New Activities Initiated After Road Construction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	6	16	22
	(3.75)	(21.25)	(9.58)
No	154	64	218
	(96.25)	(77.50)	(90.00)
Total	160	80	240
	(100.00)	(100.00)	(100.00)
<b>If Yes than of What Type</b>			
Shop	3	10	13
	(50.00)	(62.50)	(59.09)
Transport	1	3	4
	(16.67)	(18.75)	(18.18)
Tailor	1	0	1
	(16.67)	(0.00)	(4.55)
Dairy	0	1	1
	(0.00)	(6.25)	(4.55)
Repair	1	2	3
	(16.67)	(12.50)	(13.64)
Total	6	16	22
	(100.00)	(100.00)	(100.00)

**(ix) Improvements in the Availment of Educational & Medical Facilities**

The opinion of the respondents were sought about the extent to which they feel that road construction has facilitated their availment of educational and health facilities. The responses received with respect to educational facilities are as positive as was the case in Rae Bareilly where 80 per cent felt that things have improved as the corresponding figure for Jhansi is around 71 per cent. The main advantage is viewed in terms of convenience felt by their children in going to various educational institutions. Even if we look at the schools which were already within the village the regularity of teachers had improved and this in turn means that teaching has become more regular as compared to earlier (see Table 3.28).

Table 3.28: Changes Observed In Field of Education After Road Construction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	122	48	170
	(76.25)	(60.00)	(70.83)
No	37	32	69
	(23.13)	(40.00)	(28.75)
Total	160	80	240
	(100.00)	(100.00)	(100.00)
<b>If Yes, how (Nos.)</b>			
Going to School	96	41	137
	(60.00)	(51.25)	(57.08)
Teachers have become regular	62	16	78
	(38.75)	(20.00)	(32.50)
Easy to avail higher education	65	26	91
	(40.63)	(32.50)	(37.92)
Aganwadi centre has opened	20	6	26
	(12.50)	(7.50)	(10.83)
Others	7	2	9
	(4.38)	(2.50)	(3.75)
No. of HH	160	80	240

The advantages of the road are felt to a much greater extent among the respondents with respect to availment of medical facilities with almost 97 per cent feel that road construction has been highly advantageous in availing medical facilities whether in a government run institution or a private clinic and has also led to saving of time as well as money. Even the Asha and ANM can visit their villages with much greater ease and the frequency of their visits have increased. In the absence of a proper metal road carrying the sick for treatment was extremely difficult. The problems appeared even more acute whenever the need to visit a doctor was felt during night time. But the entire scenario has changed with improved accessibility after road construction (Table 3.29).

Table 3.29: Changes Observed in Availing Medical Facilities after Road Constriction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	153	79	232
	(95.63)	(98.75)	(96.67)
No	7	1	8
	(4.38)	(1.25)	(3.33)
Total	160	80	240
	(100.00)	(100.00)	(100.00)
<b>If Yes, how (Nos)</b>			
Medical Facilities available within village	7	0	7
	(4.38)	(0.00)	(2.92)
Asha/ANM come regularly	98	40	138
	(61.25)	(50.00)	(57.50)
Reaching PHC is easy	116	59	175
	(72.50)	(73.75)	(72.92)
Contacting private doctor easily	100	61	161
	(62.50)	(76.25)	(67.08)
Reduction in cost of medicine	89	54	143
	(55.63)	(67.50)	(59.58)
No. of HH	160	80	240

(x) **Changes in Flow of Traffic, Repair and Maintenance of Vehicles etc.**

In order to check the flow of traffic both into and out of the villages selected by our members of the survey team devoted around 8 hours. Records of different types of vehicles entering the village and leaving the village were separately maintained and these are being presented in Table 3.30. As can be observed from these tables the most frequent movement is of individuals moving on bicycles or two-wheelers such as scooters and motorcycles. As a result of the availability of the all-weather road the traffic flow has increased by around 25 per cent.

**Table 3.30: Details about Traffic Flow**

Mode of Transport		Selected Villages								Control Villages	
		Tilaita	Bachhauni	Punauli Khurd	Kottora	Shahpura	Gorpura	Ghanghari	Dimrauni	Bugwari	Sajera
Cycle	In	24	64	72	78	84	14	22	64	10	50
	Out	20	50	44	90	110	16	36	72	14	64
Motor Cycle/ Scooter	In	20	24	14	46	22	14	18	60	2	14
	Out	18	20	16	50	36	10	26	64	2	22
Car/Jeep	In	--	2	4	10	4	4	2	2	--	--
	Out	--	2	--	12	6	6	2	2	--	--
Tractor	In	4	14	2	10	10	6	8	14	--	--
	Out	6	10	4	14	8	10	18	18	--	--
Bullock Cart	In	2	2	6	14	16	12	16	2	--	8
	Out	4	2	4	12	6	8	22	4	--	12
Vikram	In	8	6	4	12	8	--	--	6	--	2
	Out	6	4	4	10	6	--	--	4	--	2

The other advantage people are reaping as a result of the road is that their expenditure on fuel as well as repair and maintenance has reduced by around 6 per cent. Apparently this does not appear to be a very big saving but its long term impact is meaningful (Table 3.31).

**Table 3.31: Impact of Road on Repair/Maintenance of Vehicles on Fuel Cost**

Details	Cultivating Households	Non Cultivating Households	Total
Yes	146	70	216
	(91.25)	(87.50)	(90.00)
No	14	10	24
	(8.75)	(12.50)	(10.00)
Total	160	80	240
	(100.00)	(100.00)	(100.00)
<b>If yes how much (in %)</b>			
Repair and maintenance and fuel Cost	6.80	4.10	5.90

Another significant advantage which has been the outcome of the all-weather road is that the means of transportation have also changed as reported by almost 85 per cent of the total households. The use of cycles has been replaced by scooters and motorcycles. Some have started cycling while earlier they were used to walking. A proper metal road has increased the number of tempos which is a convenient and relatively cheap means of transport.

The road has increased mobility among individuals. There are a number of reasons which causes movement among the villagers and the most significant among them are sale of the products and purchase of inputs and other consumables or durables. Equally important is availment of education and medical facilities. These are essential reasons and even earlier people had to go out but now it has become more convenient and so the people also move out to make social visits or for pure entertainment. The frequency of visits per month are relatively higher in case of movement upto 5 kilometers and declines to half for distances upto and beyond 10 kms. There is not much difference between cultivating and non-cultivating households as is evident from Table 3.32.

**Table 3.32: Main Purpose for Going Out of Village**

Details	Cultivating Households	Non Cultivating Households	Total
Sale/Business	160 (100.00)	79 (98.75)	239 (99.58)
Purchasing	157 (98.13)	80 (100.00)	237 (98.75)
Education Purpose	160 (100.00)	80 (100.00)	240 (100.00)
Health Facility	156 (97.50)	75 (93.75)	231 (96.25)
Social Visits	133 (83.13)	50 (62.50)	183 (76.25)
Entertainment	63 (39.38)	18 (22.50)	81 (33.75)
Others	22 (13.75)	1 (1.25)	23 (9.58)
No. of HH	160	80	240
<b>Frequency of Traveling (monthly)</b>			
Within 5 Kms	8.66	8.3	8.54
5 to 10 Kms	4.55	4.28	4.46
Above 10 kms	3.99	3.64	3.88

#### (xi) Perception of Respondents

It was anticipated that the all-weather road would bring about positive changes not only in their living conditions but also in the overall condition of the village as well. We, therefore, enquired about these aspects and also asked for their opinion about the PMGSY scheme itself and their suggestion through which the scheme can be improved.

Responses relating to change in overall condition of the villages are tabulated in Table 3.33. At the village level the biggest impact has been on the convenience with which they are able to sell their produce in the Haats located outside the village resulting in higher earnings by way of more remunerative prices. Better mobility has also facilitated the process of procurement of various inputs and other items of household use. In doing this both time and fuel cost is saved.

Table 3.33: Improvement in Overall Condition of Village

Details	Cultivating Households	Non Cultivating Households	Total
Procurement of Seed Fertilizer	113	51	164
	(70.63)	(63.75)	(68.33)
In marketing	119	64	183
	(74.38)	(80.00)	(76.25)
Saving of time in traveling	87	44	131
	(54.38)	(55.00)	(54.58)
Saving in Cost of traveling	85	36	121
	(53.13)	(45.00)	(50.42)
Improvement in education	34	17	51
	(21.25)	(21.25)	(21.25)
Improvement in availing health facilities	33	22	55
	(20.63)	(27.50)	(22.92)
Awareness is increased	167	86	253
	(104.38)	(107.50)	(105.42)
No. of HH	160	80	240

Moreover, availment of educational and health facilities has also become more convenient. In a similar fashion even the lives of individuals themselves have also improved as indicated by almost 88 per cent of our total households. The main areas of improvement in their personal lives are increased in their incomes and easy access to educational and health facilities (Table 3.34).

Table 3.34: Changes in Living Condition

Details	Cultivating Households	Non Cultivating Households	Total
Yes	136	75	211
	(85.00)	(93.75)	(87.92)
No	24	5	29
	(15.00)	(6.25)	(12.08)
Total	160	80	240
	(100.00)	(100.00)	(100.00)
<b>If yes Than what type</b>			
Education	91	39	130
	(56.88)	(48.75)	(54.17)
Health	80	50	130
	(50.00)	(62.50)	(54.17)
Increase in Income	87	48	135
	(54.38)	(60.00)	(56.25)
Improvement in Living Condition	15	7	22
	(9.38)	(8.75)	(9.17)
Improvement in Transport	115	55	170
	(71.88)	(68.75)	(70.83)
Saving in Transportation Cost	26	14	40
	(16.25)	(17.50)	(16.67)
No. of HH	160	80	240

The villages are satisfied with the quality of road construction with two-third households reporting that the quality of construction was good or very good. Another 40 per cent are happy even with the existing condition of the road constructed under PMGSY. Their main complaint however, is that regular repair and maintenance is not being done. However, around 90 per cent are very happy with respect to the connectivity provided by the road (Table 3.35).

Table 3.35: Perception of respondents about PMGSY

Details	Cultivating Households	Non Cultivating Households	Total
<b>How was the quality of road</b>			
Very Good	29	8	37
	(18.13)	(10.00)	(15.42)
Good	84	46	130
	(52.50)	(57.50)	(54.17)
Average	37	21	58
	(23.13)	(26.25)	(24.17)
Poor	10	5	15
	(6.25)	(6.25)	(6.25)
Total	160	80	240
	(100.00)	(100.00)	(100.00)
<b>How is its present condition</b>			
Very good	8	2	10
	(5.00)	(2.50)	(4.17)
Good	59	27	86
	(36.88)	(33.75)	(35.83)
Has deteriorated	93	51	144
	(58.13)	(63.75)	(60.00)
Total	160	80	240
	(100.00)	(100.00)	(100.00)

Table 3.35 (contd....)

<b>Is connectivity appropriate</b>			
Yes	147 (91.88)	68 (85.00)	215 (89.58)
No	13 (7.50)	12 (15.00)	25 (10.42)
Total	160 (100.00)	80 (100.00)	240 (100.00)
<b>Is repair and maintenance of road being done timely and properly</b>			
Yes	39 (24.38)	8 (10.00)	47 (19.58)
No	121 (75.63)	72 (88.75)	193 (80.42)
Total	160 (100.00)	80 (100.00)	240 (100.00)

As far as their suggestions are concerned the most important aspect to be ensured is regular maintenance of the roads. This would ensure smooth flow of traffic and longevity of the road as well. In the opinion of individuals when survey work is being done prior to the sanction of the road proper opinion of villagers is not always sought. They therefore feel that greater participation of the village community is desirable. As was the opinion of individuals in Rae Bareilly even in Jhansi villagers are not happy with the sides of newly constructed roads not having a protection by way of brick soling. Because if it is left kutchra along the edges the metal road tends to crack up along the corners and causes major damage to roads (Table 3.36).

Table 3.36: Suggestions of Respondents About PMGSY

Details	Cultivating Households	Non Cultivating Households	Total
Maintenance of road	112 (70.00)	72 (90.00)	184 (76.67)
Quality of Road	47 (29.37)	21 (26.25)	68 (28.33)
Participation of Villagers	69 (43.13)	33 (41.25)	102 (42.50)
Connectivity to main road	36 (22.50)	19 (23.75)	55 (22.92)
Roads are according to Norms	37 (23.13)	15 (18.75)	52 (21.67)
Brick soling on either side of road	111 (69.38)	46 (57.50)	157 (65.42)
Total No. of Households	160	80	240

### C. ANALYSIS OF THE HOUSEHOLDS OF CONTROL VILLAGES

#### (i) General Information

Among the households selected from our control villages over 60 per cent from both categories were from the OBC category. The literacy level among respondents was poor among

respondents of cultivating households and around 615 per cent of them were illiterates. The situation was much better among non-cultivators where around 48 per cent had studied upto the primary level at least (Table 3.37).

Table 3.37: Details About Respondents

Details	Cultivating Households	Non Cultivating Households	Total
<b>Caste</b>			
General	10 (25.64)	6 (28.57)	16 (26.67)
OBC	25 (64.10)	13 (61.90)	38 (63.33)
SC/ST	4 (10.26)	2 (9.52)	6 (10.00)
Total	39 (100.00)	21 (100.00)	60 (100.00)
Average Age	43.28	42.1	42.87
<b>Educational Status</b>			
Illiterate	24 (61.54)	2 (9.52)	26 (43.33)
Literate	3 (7.69)	4 (19.05)	7 (11.67)
Upper Primary	8 (20.51)	10 (47.62)	18 (30.00)
HS/Inter	3 (7.69)	4 (19.05)	7 (11.67)
Post Graduate	1 (2.56)	1 (4.76)	2 (3.33)
Total	39 (100.00)	21 (100.00)	60 (100.00)
<b>Occupational Status</b>			
Agriculture/Animal Husbandry	39 (100.00)	0 (0.00)	39 (65.00)
Small/Big Shop	0 (0.00)	7 (33.33)	7 (11.67)
Self employed	0 (0.00)	1 (4.76)	1 (1.67)
Manufacturing	0 (0.00)	3 (14.29)	3 (5.00)
Job	0 (0.00)	10 (47.62)	10 (16.67)
Total	39 (100.00)	21 (100.00)	60 (100.00)

Details of family members highlight the fact that the overall size of the households was around 6.8. It was relatively higher among non-cultivating households. If we look at their literacy levels around 43 per cent have studied upto the primary level. Although the number of graduates and post-graduates is quite low but around 15 per cent of the total population have received some sort of technical education.

Individuals are distributed in different age group categories with maximum belonging to the age groups of below 15 years and those between 15-35 years. All these details along with details of their primary and secondary education are provided in Table 3.38.

Table 3.38: Details about Households

Details	Cultivating Households	Non Cultivating Households	Total
<b>Sex</b>			
Male	135 (54.44)	82 (53.59)	217 (54.11)
Female	113 (45.56)	71 (46.41)	184 (45.89)
Total	248 (100.00)	153 (100.00)	401 (100.00)
Average Household Size	6.2	7.6	6.7
<b>Age</b>			
Below 15	96 (38.71)	68 (44.44)	164 (40.90)
15 to 35	88 (35.48)	43 (28.10)	131 (32.67)
35 to 60	43 (17.34)	36 (23.53)	79 (19.70)
Above 60	21 (8.47)	6 (3.27)	27 (6.48)
Total	248 (100.00)	153 (100.00)	401 (100.00)
<b>Educational Status</b>			
Illiterate	100 (40.32)	35 (22.88)	135 (33.67)
Literate	7 (2.82)	7 (4.58)	14 (3.49)
Upper Primary	104 (41.94)	68 (44.44)	172 (42.89)
HS/Inter	8 (3.23)	11 (7.19)	19 (4.74)
Post Graduate	1 (0.40)	1 (0.65)	2 (0.50)
Others	28 (11.29)	31 (20.26)	59 (14.71)
Total	248 (100.00)	153 (100.00)	401 (100.00)
<b>Working Status</b>			
Child	26 (10.48)	30 (19.61)	56 (13.97)
Student	72 (29.03)	40 (26.14)	112 (27.93)
Working	112 (45.16)	58 (37.91)	170 (42.39)
Housewife	30 (12.10)	20 (13.07)	50 (12.47)
Old	8 (3.23)	5 (3.27)	13 (3.24)
Total	248 (100.00)	153 (100.00)	401 (100.00)

Table 3.38(contd...)

<b>Primary Occupation</b>			
Agriculture/Animal Husbandry	97	24	121
	(86.61)	(41.38)	(71.18)
Non Agr Labour	9	10	19
	(8.04)	(17.24)	(11.18)
Shop/Business	1	8	9
	(0.89)	(13.79)	(5.29)
Manufacturing	0	3	3
	(0.00)	(5.17)	(1.76)
Service	5	13	18
	(4.46)	(22.41)	(10.59)
Total	112	58	170
	(100.00)	(100.00)	(100.00)
<b>Occupation Secondary</b>			
Agriculture/Animal Husbandry	4	16	20
	(14.29)	(66.67)	(38.46)
Agr Labour	1	0	1
	(3.57)	(0.00)	(1.92)
Non Agr Labour	23	7	30
	(82.14)	(29.17)	(57.69)
Manufacturing	0	1	1
	(0.00)	(4.17)	(1.92)
Total	28	24	52
	(100.00)	(100.00)	(100.00)

**(ii) Agricultural Situation and Livestock Ownership**

The average area under cultivation among cultivators belonging to different land holding categories is given in Table 3.39. The overall size of land holding worked out to 4.48 acres per household. Over 80 per cent of this land is irrigated. However, it must be kept in mind that because of the drought conditions many wells have dried up and they are the only source of irrigation.

Table 3.39: Details of Land Holding (Acres)

Details	Below 2.5	2.5 to 5.0	Above 5.0	Total
Avg Overall Land Holding	1.58	4.47	10	4.93
Average Size of Cultivation	1.56	3.68	8.58	4.48
Average Size of Irrigation	(84.61)1.32	(8234)3.03	(77.39)6.64	(80.35)3.60

The average area under different crops in the villages a few years earlier and the present situation reveal a sad picture. Area under wheat has suffered the biggest setback and even in other crops a decline is witnessed except for other foodgrains. This is as a result of the persisting drought conditions in the district (Table 3.40).

Table 3.40: Average Area Under Crops Per Household (acres)

Crops	2-3 Years Before				Present Situation			
	below 2.5	2.5 to 5.0	Above 5	Total	below 2.5	2.5 to 5.0	Above 5	Total
Wheat	1.13	1.95	4.18	2.71	0.08	0.50	1.21	0.70
Paddy	0.15	0.29	0.68	0.42	0.10	0.17	0.38	0.24
Urd	0.84	1.17	1.82	1.37	0.57	1.08	1.37	1.07
Chana	0.60	0.98	1.74	1.21	0.10	0.33	0.29	0.26
Other Pulses	0.15	0.42	1.53	0.83	0.10	0.25	0.73	0.42
Other Food Grains	0.15	0.50	1.47	0.83	0.43	0.33	1.65	0.93
Mustard	0.10	0.33	0.79	0.47	0.10	0.17	0.53	0.31
Other Oil Seed	1.05	1.58	3.00	2.06	0.53	1.42	2.21	1.53
Spices	0.00	0.00	0.06	0.03	0.00	0.00	0.01	0.01

Not only has drought adversely affected the area under different crops but it has also affected yield rates of the crops. The crops to suffer most have been pulses where considerable decline is observed. The only crop which has registered a minimal increase however is mustard (Table 3.41).

Table 3.41: Crops-wise Productivity (Qtls/Acre)

Crops	2-3 Years Before				Present Situation			
	below 2.5	2.5 to 5.0	Above 5	Total	below 2.5	2.5 to 5.0	Above 5	Total
Wheat	7.73	8.68	7.66	7.89	8.00	8.50	7.51	7.74
Paddy	6.67	8.29	6.78	7.09	8.00	5.50	6.62	6.53
Urd	11.52	6.74	1.65	4.54	11.54	1.02	1.04	2.45
Chana	3.25	2.50	2.92	2.85	2.00	1.63	1.10	1.40
Other Pulses	2.00	13.19	2.12	3.82	1.30	1.70	0.96	1.12
Other Food Grains	2.67	4.50	3.90	3.95	2.94	3.75	3.04	3.10
Mustard	2.00	1.83	1.53	1.62	2.00	0.85	1.83	1.68
Other Oil Seed	1.83	4.39	1.76	2.39	0.93	1.44	1.12	1.19
Spices	0.00	0.00	9.00	9.00	0.00	0.00	8.00	8.00

The cultivator hopes to generate a surplus out of his agricultural produce after he has set aside a part of the produce for personal consumption and seed requirement. Unfortunately droughts have forced a decline in area under crops as well as in crop productivity. Consequently marketable surplus has declined as is evident from the table on average sales of crops per household as seen a few years ago and the present situation.

If we look at crops sold as a percentage of total output it is observed that the proportion sold varies between cultivators of different land holding sizes over different crops. However, if we compare the situation of a few years earlier to that prevailing at the present then it is found that sales have declined. This is directly related to the decline in marketable surplus caused by lower area under crops and decline in productivity (for details see Table 3.42).

Table 3.42: Sale as % to Total Output

Crops	2-3 Years Before				Present Situation			
	below 2.5	2.5 to 5.0	Above 5	Total	below 2.5	2.5 to 5.0	Above 5	Total
Wheat	0.00	40.89	47.06	40.65	0.00	76.47	61.69	63.51
Paddy	20.00	0.00	43.59	30.77	0.00	0.00	23.26	16.13
Urd	9.48	17.02	73.39	25.89	39.11	58.17	57.73	45.96
Chana	87.18	71.19	80.23	79.26	100.00	69.23	72.73	75.00
Other Pulses	33.33	6.07	80.76	39.90	76.92	68.63	71.13	70.84
Other Food Grains	100.00	33.33	73.85	66.15	0.00	20.00	35.29	29.33
Mustard	50.00	34.97	43.48	41.88	50.00	58.82	39.39	42.08
Other Oil Seed	94.81	33.53	94.76	68.20	89.39	87.12	89.76	88.83
Spices	0.00	0.00	100.00	100.00	0.00	0.00	100.00	100.00

Cost of production has declined at present when we compare the same with the cost which was being incurred. This is so because to some extent area under crops has declined and also because as a result of wells drying up the use of chemical fertilizers has been reduced. Thus cost of cultivation per acre has reduced by half among all three land holding size groups (Table 3.43).

Table 3.43: Cost of Production (rupees)

Details	2-3 Years Before			Per Acre Cost of Prod	Present Situation			Per Acre Cost of Prod
	Cult. HH	Non Cult H	Total		Cult. HH	Non Cult H	Total	
<b>Per Household</b>								
Below 2.5	2049	4465	4342	4389	691	2524	1999	2020
2.5 to 5.0	4197	2997	5665	2982	2541	1848	3447	1814
Above 5.0	14034	1229	14329	3184	5952	1548	6616	1470
Total	20280	8692	24336	3293	9183	5920	12061	1632

The prices of various crops have normally shown an increasing trend in the last few years and the same is depicted in Table 3.44.

Table 3.44: Value of Crops (Rupees per Quintal)

Crops	2-3 Years Before				Present Situation			
	below 2.5	2.5 to 5.0	Above 5	Total	below 2.5	2.5 to 5.0	Above 5	Total
Wheat	727	699	726	718	755	772	719	750
Paddy	618	560	583	591	528	383	513	486
Arhar	875	1600	0	1117	1100	2125	0	1442
Urd	1477	1601	1550	1537	1743	2048	2293	2010
Chana	1064	1573	1560	1434	1413	883	477	868
Other Pulses	1419	1368	1777	1624	1100	1443	1302	1308
Other Food Grains	500	500	485	492	570	600	660	622
Mustard	1736	1638	1694	1688	1371	994	878	1060
Other Oil Seed	2293	2140	2456	2296	2479	3065	3188	2933

The villagers keep different types of animals to supplement their incomes from agriculture. Besides the milch animals, goats and sheep are found in all households as they can sustain themselves much better in adverse conditions. There is not much change in ownership pattern between cultivating and non-cultivating households. But it seems that the drought

conditions have forced the individuals to reduce their stock of livestock for want of sufficient animal feed. This adverse affect can be seen in all types of animals if we compare the present ownership pattern to that obtained a few years earlier (Table 3.45).

Table 3.45: Details of Livestock Ownership (average Number)

Details	2-3 Years Before			Present Situation		
	Cultivating HH	Non Cultivating HH	Total	Cultivating HH	Non Cultivating HH	Total
Cow	1.96	1.14	1.69	1.75	1.21	1.57
Buffalo	1.19	0.88	1.08	1.19	0.88	1.08
Bullocks	2	1.57	1.9	1.83	2	1.87
Young Stock	1.44	0.77	1.21	1.96	1.38	1.76
Goats	3.73	5.54	4.33	3.96	4.54	4.15
Sheep	45	60	52.5	40	35	37.5
Poultry	18.5	4	12.7	5.5	2.75	4.4
Total	3.26	3.2	3.24	2.67	2.68	2.68

### (iii) Income of the Households

Income earned by our sample households from different sources is shown in Table 3.46. Despite the fact that agriculture has suffered because of the drought, it continues to be the main source of income of our households. However, what has happened is that its share even among cultivating households has declined considerably from around 72 to 58 per cent between the two points of time taken for comparison. Even the shares of other products of animal husbandry have shown an overall declining trend. Consequently, people have been forced to lay greater emphasis on wage labour whose share to total household income has increased from around 13

Table 3.46: Average Income From All Sources Per Household (Rupees)

Average Income from Different Sectors	2-3 Years Before			Present Situation			Change in Income %		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
Agriculture	19845	4015	14568	21495	4984	15991	8	24	10
	(71.66)	(13.51)	(50.82)	(58.63)	(11.89)	(41.24)			
Animal Husbandry	705	0	458	1067	600	903	51.38	0.00	97.23
	(2.54)	(0.00)	(1.60)	(2.91)	(1.43)	(2.33)			
Other Products of Animal Husb	1315	1692	1447	1946	564	1463	48.03	-66.65	1.09
	(4.75)	(5.69)	(5.05)	(5.31)	(1.35)	(3.77)			
Wages	3649	2739	3330	9131	5977	8027	150.25	118.21	141.02
	(13.18)	(9.22)	(11.62)	(24.90)	(14.26)	(20.70)			
Other eco. Activities	1538	19935	7977	1846	27715	10900	20.00	39.02	36.64
	(5.56)	(67.09)	(27.83)	(5.04)	(66.13)	(28.11)			
Other Sources	641	1333	883	1179	2071	1492	84.00	55.36	68.87
	(2.31)	(4.49)	(3.08)	(3.22)	(4.94)	(3.85)			
Avg. Per HH Income	27693	29715	28664	36664	41912	38776	32	41	35

to 23 per cent. In fact the share of cultivating households has almost doubled. As far as non-cultivating households are concerned their main source of income is other economic activities such as manufacturing, business and service. On the whole household incomes have gone up by around 35 per cent. In the case of Jhansi the income of non-cultivating households has become higher than cultivating households because the increase in agricultural income of cultivating households is only marginal. Separate tables for income being earned from animal husbandry sector, other economic activities and other sources are provided in Annexures 3.7, 3.8, 3.9 and 3.10 at the end of the chapter.

#### (iv) Employment Generation Among Wage Labourers

In order to find out whether villagers have been getting more opportunities of getting wage labour at present, we enquired from our respondents about number of persons working as wage labourers and the person days of employment received by them earlier and at present. In agriculture only a couple of individuals sought work as agricultural labourers and they were successful in getting 100 days of employment as against 90 days earlier by moving out to some adjoining areas. But the real advantage is seen when we look at wage earners in the non-agricultural activities. Not only has the number of wage earners increased but the average days of employment have gone up considerably from around 100 days per person to 137 days (Table 3.47). The conditions of drought have forced people to move out despite the fact that they have to travel on roads which are not properly constructed.

Table 3.47: Person days Employed by Labourers and Income

Details	2-3 Years Before			Present Situation		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Ag Labour Male</b>						
Number	2	0	2	2	0	2
Avg No of Days	90	0	90	100	0	100
<b>Non Ag Labour Male</b>						
Number	22	11	33	29	13	42
Avg No of Days	99	101	100	143	122	137
<b>Non Ag Labour Female</b>						
Number	2	3	5	2	3	5
Avg No of Days	60	63	62	70	73	72
<b>Total</b>						
Number	26	14	40	33	16	49
Avg No of Days	95	93	94	136	113	129

#### (v) Marketing of Products

Although our control villages do not have an all-weather road the cultivators prefer to sell major part of their agricultural produce in the Haat located beyond 3 kms. However, because agricultural production has been adversely affected the share being sold in distant Haats has gone

down by over 10 percentage points (Table 3.48). Even in animal husbandry products the percentage of sale in Haats outside the village has declined. However, there is no change in other products which continue to be sold within the village.

Table 3.48: Details regarding marketing of products (in Percentage)

Details	2-3 Years Before			Present Situation		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Agriculture produce</b>						
Within village	29.08	64.67	39.15	44.61	58	52.17
Nearest Haat (with in 3 kms)	5.26	6.67	5.66	5.26	0	3.77
Haat Relatively beyond 3 kms	65.66	28.67	55.19	50.13	28.67	44.06
<b>Animal Husbandry Product</b>						
Within village	25	0	25	5	100	36.67
Nearest Haat (with in 3 kms)	0	0	0	0	0	0
Haat Relatively beyond 3 kms	75	0	75	95	0	63.33
<b>Manufacturing</b>						
Within village	0	0	0	0	0	0
Nearest Haat (with in 3 kms)	0	0	0	0	0	0
Haat Relatively beyond 3 kms	0	100	100	0	100	100
<b>Other Products</b>						
Within village	0	100	100	0	100	100
Nearest Haat (with in 3 kms)	0	0	0	0	0	0
Haat Relatively beyond 3 kms	0	0	0	0	0	0

#### (vi) Ownership of Assets among the Households

The households fall in the relatively low income category households with overall average annual income of the households working out to be below Rs.3000 per month. As a result it is only natural that possession of assets of various types are minimal among our sample households. In fact the figures given in Table 3.49 reveal that whether we take agricultural implements or means of transport or household assets on an average they do not even own one of each category. Moreover, over the last few years not much change has taken place in the ownership pattern either.

Table 3.49: Details about Assets (Average Number)

Details	2-3 Years Earlier			Present Situation		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Agriculture</b>						
Plough	1.24	1.17	1.22	1.55	1.08	1.41
Bullock cart	1.00	1.00	1.00	0.89	0.67	0.84
Tractor	0.50	1.00	0.67	1.00	1.00	1.00
Chaff Cutter	1.00	1.00	1.00	1.00	0.90	0.96
Others	1.19	1.00	1.14	1.14	1.13	1.14
<b>Transport</b>						
Cycle	1.03	1.00	1.02	1.03	1.14	1.07
Motor Cycle/Scooter	1.00	1.00	1.00	0.75	1.00	0.80
<b>Household Assets</b>						
Radio	1.00	0.85	0.93	0.94	0.92	0.93
Television	1.00	0.20	0.33	1.00	1.00	1.00
Mobile	0.24	0.41	0.31	1.08	1.00	1.05
<b>Total</b>	<b>0.95</b>	<b>0.85</b>	<b>0.92</b>	<b>1.11</b>	<b>1.01</b>	<b>1.07</b>

### (vii) Emergence of New Activities

The level of backwardness of our control villages can also be visualized from the fact that out of the 60 households covered by us just one household belonging to the non-cultivating category have started any new activity. The lone individual has started a petty shop in the village (Table 3.50). At the beginning of the chapter itself it had been indicated that our villages are backward and an all-weather road is their top priority but in the case of our village the forest department clearance is posing a problem while the other has only just been included under the PMGSY scheme. Even in the case of this village, therefore, it will take some time before it has an all-weather road.

Table 3.50: Details about new work Started by Members of Household 2-3 Years Before

Details	Cultivating Households	Non Cultivating Households	Total
Yes	0 (0.00)	1 (4.76)	1 (1.67)
No	40 (100.00)	19 (95.24)	59 (98.33)
Total	40 (100.00)	20 (100.00)	60 (100.00)
<b>If Yes, Than of What Type</b>			
Shop	0 (0.00)	1 (100.00)	1 (100.00)
Total	0 (0.00)	1 (100.00)	1 (100.00)

### (viii) Time Taken in Reaching the Nearby Market and Frequency of Traveling

The connectivity which is desirable in terms of length of road needed in 4 kms in one case and approximately 3 kms in the second. Since roads are not good considerable time is taken in reaching the market. This is indicated in Table 3.51. In case a properly constructed road had been provided the villagers would have saved a lot of travel time each time a visit to the market was made.

Table 3.51: Time Taken to Reach the Market Centre

Vehicle	Time (Mins.)
Cycle	60
Bullock Cart	75
Tractor Trolley	60
Other	55

As a result of the absence of an all-weather road and time consumed in reaching places outside the village the frequency of visits of the villagers is automatically restricted as is evident from Table 3.52. Even in the case of the shortest distance the villagers make only around 3 visits. For distances in excess of 10 kms the frequency is reduced to 2 visits only.

Table 3.52: Average Frequency of Traveling

Details	Cultivating Households	Non Cultivating Households	Total
within 5km	3.72	1.52	2.95
5-10 km	3.78	3.53	3.64
Above 10	2.08	1.84	2.00

The purpose of traveling whether it is our selected or control villages is identical. The main reasons for moving out of the village is sale or business, purchasing, availing educational and health facilities (Table 3.53).

Table 3.53: Main Purpose for Going Out of Village

Details	Cultivating Households	Non Cultivating Households	Total
Sale/Business	39	21	60
	(100.00)	(100.00)	(100.00)
Purchasing	38	22	60
	(97.44)	(104.76)	(100.00)
Education Purpose	38	21	59
	(97.44)	(100.00)	(98.33)
Health Facility	34	20	54
	(87.18)	(95.24)	(90.00)
Social Visits	27	19	46
	(69.23)	(90.48)	(76.67)
Entertainment	13	8	21
	(33.33)	(38.10)	(35.00)
Others	4	2	6
	(10.26)	(9.52)	(10.00)
Total Households	39	21	60

#### (ix) Problems Arising in the Absence of an All-Weather Road

As our villages are backward and desperately in need of proper road connectivity it is natural that they are all unanimously of the view that they are being subject to all types of inconvenience. The biggest problem arises in the availment of educational and health facilities. Their perceptions have been duly recorded and are presented in Table 3.55 and 3.56 respectively. The former deals with problems related to education while the latter highlights problems in getting medical treatment.

Almost 88 per cent respondents admit that their children re put to inconvenience in going to school because the village does not have a proper road. Particularly in the case of higher education the problem is felt much more. The regularity of teachers who do not reside within the village is also affected (Table 3.54).

Table 3.54: Problem of Educational Facility due to Non Availability of All Weather Road

Details	Cultivating Households	Non Cultivating Households	Total
Yes	34 (85.00)	19 (95.00)	53 (88.33)
No	6 (15.00)	1 (5.00)	7 (11.67)
Total	39 (100.00)	21 (100.00)	60 (100.00)
<b>If Yes Than of what type</b>			
Problems in going to School	21 (53.85)	7 (33.33)	28 (46.67)
Problems of teacher' regularity	23 (58.97)	14 (66.67)	37 (61.67)
Availing higher education difficult	30 (76.92)	17 (80.95)	47 (78.33)
Aganwadi centre could have opened	3 (7.69)	1 (4.76)	4 (6.67)
Others	1 (2.56)	0 (0.00)	1 (1.67)
Total Households	39	21	60

The absence of the road is felt even more during the time when medical attention is required among any family member. Taking sick person even on a tractor trolley takes around one hour. Added to it is the problem caused by traveling on an uneven surface as the agony of the patient is aggravated further. Moreover, if medical services are needed at night then problems get further compounded. Just as regularity of teachers is affected the same holds true in the case of Asha and ANM who visit the village to provide assistance in health related problems (Table 3.55).

Table 3.55: Problem of Health Facility due to Non Availability of All Weather Road

Details	Cultivating Households	Non Cultivating Households	Total
Yes	39 (100.00)	21 (100.00)	60 (100.00)
Total	39 (100.00)	21 (100.00)	60 (100.00)
<b>If yes, than of what type</b>			
Medical Facilities are not available within village	15 (38.46)	12 (57.14)	27 (45.00)
Asha/ANM do not come regularly	30 (76.92)	17 (80.95)	47 (78.33)
Reaching PHC	37 (94.87)	18 (85.71)	55 (91.67)
Contacting private doctor	33 (84.62)	14 (66.67)	47 (78.33)
Expense in cost of medicine	29 (74.36)	13 (61.90)	42 (70.00)
Total Households	39	21	60

Besides problems of education and health the other areas which could be facilitated after road construction are sale of products and purchase of inputs and other items, saving in time, fuel as well as maintenance of vehicles (Table 3.56).

Table 3.56 Details of Difficulties Due to Non Availability of Road

Details	Cultivating Households	Non Cultivating Households	Total
Health Facility	32	20	52
	(82.05)	(95.24)	(86.67)
Education Facility	28	14	42
	(71.79)	(66.67)	(70.00)
Traveling	8	3	11
	(20.51)	(14.29)	(18.33)
Marketing	26	11	37
	(66.67)	(52.38)	(61.67)
Maintenance of Vehicles	27	14	41
	(69.23)	(66.67)	(68.33)
Not Getting Value of Ag Produce	3	3	6
	(7.69)	(14.29)	(10.00)
Others	6	4	10
	(15.38)	(19.05)	(16.67)
Total Households	39	21	60

As a result of these limitations 90 per cent of our total respondents give very high significance to an all-weather road (Table 3.57).

Table 3.57: Details about the Importance of All Weather Road

Details	Cultivating HH	Non Cultivating HH	Total
Very Important	34	20	54
	(87.18)	(95.24)	(90.00)
Important	5	1	6
	(12.82)	(4.76)	(10.00)
Total	39	21	60
	(100.00)	(100.00)	(100.00)

#### D. MAIN POINTS ARISING OUT OF THE ANALYSIS

To put things in a nutshell, the most significant finding of the analysis is that roads constructed under PMGSY have had a positive impact on the villages as well as in the conditions of villagers. These advantages are visible in income and employment generation; education and health; ownership of vehicles as well as saving in fuel and maintenance cost of vehicles.

Unfortunately agriculture has suffered over the past few years because of drought conditions and even the road has not been able to overcome the natural disadvantage caused by

the natural factors. However, some increase in income from agriculture is observed as a result of price escalation even in the situation of reduced marketable surplus and a relative decline in the proportion of agricultural produce sold in the distant Haat where better prices can be fetched. But in terms of earnings from wages, other economic activities etc there has been improvement and overall average household incomes have gone up by around 40 per cent.

The daily wage earners because of their increased mobility are able to move out to adjoining areas more conveniently and get employment over more number of days now as compared to earlier and even in this category incomes have registered an increase.

The increased income from sale of commodities whether in agriculture or other sectors has been possible as the villagers are no longer confined to selling produce mainly in the villages but are now able to conveniently transport their products to Haats outside and receive relatively higher prices for them.

Similarly it is also observed that after road construction the ownership of motorized vehicles has gone up. The change may not be substantial looking at the modest incomes of the village households but it is certainly an indicator of signs of improvement in the lifestyles of people. They are able to travel more frequently as a lot of time is saved and the cost of fuel as well as maintenance of their vehicles has also declined. Consequently the flow of traffic is on the increase.

Besides the direct impact which can be seen in terms of higher income, more days of employment and in ownership of vehicles, the roads have also been providing advantages which can not easily be quantified but are definitely being felt as well as being acknowledged by the village community. The two areas which stand out prominently are education and health. Access to education particularly higher education has become convenient. In some of the villages even school buses are coming to pick up the children and then drop them back. Even in the village school teachers are now relatively more regular than earlier. In the past availing medical facilities in the absence of an all-weather road was extremely cumbersome procedure particularly when a case of serious illness was involved and also if medical attention was required during the night. The advent of the road has come as a blessing to one and all and every individual has singled out this benefit wholeheartedly.

As a result of all these advantages resulting from construction of roads under PMGSY our respondents are in agreement that the overall condition of the villages has improved and so has their own living condition. Not much time has lapsed since the construction of the road and the changes may not be very dramatic. However, indications are certainly pointing out that things will only improve still further in future if the roads are properly maintained.

As compared to our selected villages the control villages selected by us suffer on account of not having a proper road. Their levels of household income are lower by around Rs.5000 per annum and although they are selling a part of their produce in the Haats but transporting the produce to the market or raw materials etc. from the market cause a considerable degree of inconvenience. As a result the villagers have accorded very higher priority to an all-weather road and are of the opinion that the conditions of the villages as well as their own living conditions will improve after a proper connectivity is provided in the form of an all-weather road.

While we had conducted a household survey of our selected villages we had also held discussions with some influential persons in these villages about the PMGSY scheme. Besides this we also held discussions with officials involved in road construction under PMGSY to obtain their views about the scheme and type of problems which they face during road construction and even afterwards. The general impression given to us by respondents as a whole is that roads which were constructed during the first phase were the best quality-wise and that subsequently the same quality has not been maintained by contractors who undertook construction work later on. As was the case in Rae Bareilly repair and maintenance has remained a neglected aspect. They also felt that officials must ensure higher participation of village community by involving them to a much greater extent and not just limit their involvement in only the initial phases when the project is initially being conceived. The PMGSY scheme in fact lays down that involvement and participation of village community must be ensured to settle various issues such as proper connectivity and in donating that part of their land free of cost if the proposed road passes through it.

When we discussed these issues with the officials they pointed out that although Class A contractors were given the work orders as per the norms laid down in the PMGSY guidelines but in most cases these big contractors are in the habit of sub-letting the contract to others who do not possess either the required equipments nor have adequate staff as per the laid down norms. This is one shortcoming for which no immediate solution is available and yet demands and pressures of targets and their achievement leave with little choice but to get work done despite the obvious limitations. The contractors are not very keen to take up small contracts involving costs below rupees one crore and once the contract is awarded, actual work is done by smaller contractors.

Repair and maintenance is another aspect which was highlighted in Rae Bareilly as well. Although the clause of routine repair and maintenance is in-built in the work order itself n contractor maintains even a camp office once road construction work is over. Moreover the

provision is of only routine maintenance and even for that the sanctioned funds are low. Yet another problem peculiar to Jhansi has a direct relationship with the type of soil. The soil conditions are such that cost of construction is quite high. Moreover cost varies from one area to another within the district itself. Keeping this fact in mind the funds to be allocated need to be revised upwards. Even the amount which is to be paid for routine repair and maintenance needs to be suitably revised. The PMGSY officials feel that the accountability of the contractors needs to be ensured fully and defaulters should be punished and duly penalized for any lapse on their part whether it be related to construction or maintenance of the roads. In case some of these corrective measures are taken the efficiency of the PMGSY scheme will go up further. Since the scheme has proved to be quite beneficial in all ways it is in the interest of the officials to plug all the loopholes and let people avail its benefits to the optimum level.

## Annexure 3.1: Distance of Main Facilities from Village

## (a) Tilaitha

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
High School/Inter College	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Health Sub Centre	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
PHC	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Market	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Cooperative Societies	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Bank Branch	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Post Office	1 to 3 kms	√	--	Kuttchi	3-5 Kms	--	√
Artificial	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kuttchi	1 to 3 kms	--	√

## (b) Bachauni

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	--	√	Kutcchi	Above 5kms	--	√
Primary	Less than 1 Kms	√	--	Kharanja	Within Village	√	--
Upper Primary School	Less than 1 Kms	√	--	Kutcchi	Within Village	√	--
High School/Inter College	Above 5kms	√	--	Kutcchi	Above 5kms	--	√
Health Sub Centre	3-5 Kms	--	√	Kutcchi	3-5 Kms	--	√
PHC	3-5 Kms	--	√	Kutcchi	3-5 Kms	--	√
CHC	3-5 Kms	--	√	Kutcchi	3-5 Kms	--	√
Family Planning Centre	3-5 Kms	--	√	Kutcchi	3-5 Kms	--	√
Aganwadi Centre	Within Village	√	--	Kutcchi	Within Village	√	--
Private Clinic	3-5 Kms	--	√	Kutcchi	3-5 Kms	--	√
Market	Above 5kms	--	√	Kutcchi	Above 5kms	--	√
Cooperative Seed Centre	3-5 Kms	--	√	Kutcchi	3-5 Kms	--	√
Cooperative Societies	3-5 Kms	--	√	Kutcchi	3-5 Kms	--	√
Bank Branch	Above 5kms	--	√	Kutcchi	3-5 Kms	--	√
Post Office	3-5 Kms	--	√	Kutcchi	3-5 Kms	--	√
Artificial	3-5 Kms	--	√	Kutcchi	3-5 Kms	--	√
PDS Shop	Within Village	√	--	Kutcchi	Within Village	√	--

## (c) Punavli

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Within Village	√	--	Kharanja	Within Village	√	--
High School/Inter College	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Health Sub Centre	Within Village	√	--	Kharanja	Within Village	√	--
PHC	Above 5kms	√	--	Kharanja	Above 5kms	--	√
CHC	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Family Planning Centre	Within Village	√	--	Kharanja	Within Village	√	--
Aganwadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Market	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Cooperative Societies	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Bank Branch	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Post Office	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Artificial	Above 5kms	√	--	Kharanja	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## (d) Turkalhachura

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Health Sub Centre	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
PHC	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Cooperative Societies	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Bank Branch	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Post Office	Less than 1 Kms	√	--	Kuttchi	Less than 1 Kms	--	√
Artificial	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

## (e) Shahpura Khurd

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3-5 Kms	--	√	Kuttchi	Above 5kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Within Village	√	--	Kharanja	Within Village	√	--
High School/Inter College	Above 5kms	--	√	Mixed	Above 5kms	--	√
Health Sub Centre	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
PHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
CHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Aganwadi Centre	1 to 3 kms	--	√	Kuttchi	Within Village	√	--
Private Clinic	Less than 1 Kms	--	√	Kuttchi	Less than 1 Kms	--	√
Market	Within Village	√	--	Kuttchi	Within Village	√	--
Cooperative Seed Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Cooperative Societies	3-5 Kms	--	√	Kuttchi	3-5 Kms	--	√
Bank Branch	3-5 Kms	--	√	Kuttchi	3-5 Kms	--	√
Post Office	Within Village	√	--	Kharanja	Within Village	√	--
Artificial	Above 5kms	--	√	Mixed	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## (f) Gorpura

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	√	--	Kuttchi	Above 5kms	√	--
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Less than 1 Kms	√	--
High School/Inter College	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Health Sub Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PHC	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	√	--	Kuttchi	Above 5kms	√	--
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Less than 1 Kms	√	--	Kuttchi	Less than 1 Kms	--	√
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Cooperative Societies	Within Village	√	--	Kuttchi	Within Village	√	--
Bank Branch	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Post Office	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Artificial	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

## (g) Dhandhari

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Health Sub Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
CHC	3-5 Kms	--	√	Kuttchi	3-5 Kms	--	√
Family Planning Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Societies	3-5 Kms	--	√	Kuttchi	3-5 Kms	--	√
Bank Branch	Above 5kms	--	√	Kuttchi	3-5 Kms	--	√
Post Office	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Artificial	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

## (h) Dimrauni

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3-5 Kms	--	√	Kuttchi	3-5 Kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Health Sub Centre	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
PHC	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Societies	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Bank Branch	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Post Office	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Artificial	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PDS Shop	3-5 Kms	--	√	Kuttchi	3-5 Kms	--	√

## Annexure 3.2: Distance of Main Facilities from Village

## (a) Bagvari

Facility	2-3 Years Earlier				Present Situation		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Health Sub Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
PHC	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
CHC	Above 5kms	√	--	Kuttchi	Above 5kms	√	--
Family Planning Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Above 5kms	√	--	Kuttchi	Within Village	√	--
Market	3-5 Kms	√	--	Kuttchi	Above 5kms	√	--
Cooperative Seed Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Cooperative Societies	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Bank Branch	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Post Office	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Artificial	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
PDS Shop	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--

## (b) Sajera

Facility	2-3 Years Earlier				Present Situation		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Health Sub Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
PHC	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Cooperative Societies	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Bank Branch	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Post Office	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
Artificial	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--
PDS Shop	3-5 Kms	√	--	Kuttchi	3-5 Kms	√	--

Annexure 3.3 : Income from Milk and Milk Products

Details	Before PMGSY			After PMGSY		
	Cultivating HH	Non Cult Activities	Total	Cultivating HH	Non Cult Activities	Total
<b>Average per Household</b>						
Total Production (Litres)	1110	385	868	1124	426	891
Value of total product (Rs)	10578	3577	8245	14656	5788	11700
Total Sale (Litres)	555	199	436	585	306	492
Total Value of Sale (Rupees)	4886	1207	3659	7909	2799	6206

Annexure 3.4 : Income from other sale of Animal Husbandry (Rs)

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average per Household</b>						
Sale of Animal	2269	1924	2154	2009	808	1609
Sale of Other Products	107	9	74	83	23	63
Total	2353	1924	2210	2073	808	1651

Annexure 3.5: Income from Other Economic Activities

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average Per HH</b>						
Manufacturing	18	3019	1018	36	4266	1446
Shop/Business	64	1514	547	354	3246	1318
Self Employment	180	2062	808	265	5065	1865
Job	1228	3118	1858	1256	4856	2456
Others	142	0	95	455	120	343
Total	1632	9713	4325	2367	17553	7429

Annexure 3.6: Average Income from Other sources

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average Per HH</b>						
Interest	175	0	117	250	0	167
rent	0	38	13	0	63	21
Money Order	1166	175	835	1993	600	1528
Pension	338	88	255	849	113	603
Others	1113	256	827	2263	479	1668
Total	2791	556	2046	5354	1254	3987

Annexure 3.7: Income from Milk and Milk Products

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average per Household</b>						
Total Production (Litres)	532	293	449	458	325	412
Value of total product (Rs)	6127	2751	4946	5672	5070	5462
Total Sale (Litres)	69	0	45	82	44	69
Total Value of Sale (Rupees)	705	0	458	1067	600	903

Annexure 3.8: Income from other sale of Animal Husbandry (Rs)

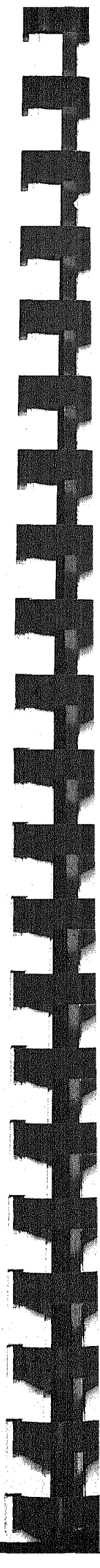
Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per Household</b>						
Sale of Animal	1,140	1,676	1,328	1,915	552	1,438
Sale of Other Products	175	16	119	31	12	24
Total	1,315	1,692	1,447	1,946	564	1,463

Annexure 3.9: Income from Other Economic Activities

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per Household</b>						
Manufacturing	-	902	316	-	1,167	408
Business	-	1,600	560	-	2,972	1,040
Job	1,538	17,433	7,102	,846	23,576	9,452
Total	1,538	19,935	7,977	,846	27,715	10,900

Annexure 3.10: Average Income from Other sources (Rs)

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per Household</b>						
Money Order	384.62	857.14	550.00	871.79	1357.14	1041.67
Others	256.41	476.19	333.33	307.69	714.29	450.00
Total	641.03	1333.33	883.33	1179.49	2071.43	1491.67



## CHAPTER IV

### IMPACT OF PMGSY IN GORAKHPUR DISTRICT

#### A. GENERAL INFORMATION ABOUT THE VILLAGES

The eight villages surveyed by us in Gorakhpur were spread over four blocks. The shortest length of the road was 1.97 kms in Bhaksa village, Brahmpur block whereas the longest was also from the same block as can be seen from Table 4.1. Major variations can be seen in the cost of road construction as a result of the soil conditions. As a result the 1.97 kms long road of Bhaksa cost Rs.73 lakh whereas a road of the same block cost only Rs.55 lakh although it was 2.5 kms in length. While 4 road constructions were initiated in 2002, the remaining roads were taken for construction in 2004. The roads which have been constructed under PMGSY in the district were of good quality and even during our survey their condition was found good except for only two roads. However, the aspect of repair and maintenance is neglected in this district as well.

Table 4.1: Sample Villages of Gorakhpur (Details of PMGSY Roads)

Village	Block	Length of Road (Kms)	Cost of Construction (Rs. Lakhs)	Year of Initiation	Year of Completion	Quality of Road (Giri Institute Observation)
Chabella	Sardar Nagar	2.00	41.51	19.06.02	May 2003	Good quality. Condition not good.
Bhaksa	Brahmpur	1.97	73.35	19.06.02	19.06.03	Good Quality and Good Condition
Pkadiyar	Brahmpur	3.95	108.09	27.07.02	27.03.04	Quality good and Condition Good
Silhata Mundera	Brahmpur	2.50	55.34	27.07.02	Nov.2003	Quality good. Condition good
Gadaina	Khajani	3.00	101.05	05.10.04	04.10.05	Quality good. Condition good
Bheusa	Khajani	3.50	106.06	05.10.04	04.10.05	Quality good. Condition good
Sihorwa	Brahmpur	2.875	92.00	21.09.04	30.06.05	Quality good. Condition good
Lonia	Pali	2.30	75.99	11.09.04	15.11.05	Quality Good. Condition not Good

Note: No maintenance is being done on any road.

Control Villages: (i) Semara (Chirgaon Block) – Road connectivity required is approximately 2.50 kms. Not covered under PMGSY.

(ii) Shiwala Tola (Jungle Kaudia Block) – Connectivity required is around 2.80 kms. Block not covered under PMGSY.

The two control villages in our sample namely Semara and Sihwala Tola were from two different blocks. Both villages are in need of roads around 2.5 kms each. Unfortunately neither of them are presently in the PMGSY selection list (Table 4.1).

#### (i) Brief Profile of Selected Villages

Details of our selected villages is being given in Table 4.2. Except for three of our villages which had a population ranging from around 1300 to 1900 the others had a relatively high population and the most populated village had over 5000 persons. The average household

size also varied from around 5.6 to 9.7 per household. Villages had a reasonable literacy level among males in 6 out of our 8 villages but in as many as 4 villages literacy rate among women ranged between 23.5 to 32 per cent which was quite low (Table 4.2).

Table 4.2: Details about Village/Habitation

Details	Gadena	Behusa	Chabaila	Bhaksa	Sihorwa	Loniya	Pakadiyar	Mudera
Total Households	187	350	460	495	450	164	310	535
Total Population	1300	2800	2580	3871	3150	1310	1875	5200
Male	677	1440	1320	2115	1760	750	955	2760
Female	623	1360	1260	1756	1390	560	920	2440
<b>Literacy (%)</b>								
Male	59.08	60.00	65.00	47.04	60.00	41.33	55.08	55.00
Female	48.15	40.00	51.98	32.00	24.89	23.57	41.96	30.00
Average Size of the Household	6.95	8.00	5.61	7.82	7.00	7.98	6.05	9.71

Looking at the area sown and net irrigated area the figures vary according to the size of the villages. The levels of irrigation were high and all our villages were fully irrigated. The main source of irrigation was private Tubewells (Table 4.3).

Table 4.3: Details of Cultivated Land

Details	Gadana	Behusa	Chabaila	Bhaksa	Sihorwa	Loniya	Pakadiyar	Mudera
Total Area (acre)	423.02	833.33	960	2286	1200	600	1998	1500
Net Sown Area (acres)	417.43	800	750	1903	1098	400	1570	1350
	(98.68)	(96.00)	(78.13)	(83.25)	(99.00)	(66.67)	(78.58)	(90.00)
Net Irrigated Area (Acres)	417.43	800.00	750.00	1903.00	600.00	400.00	1570.00	1350.00
	(100.00)	(100.00)	(100.00)	(100.00)	(54.64)	(100.00)	(100.00)	(100.00)
<b>Source of Irrigation</b>								
Private Tubewells (Nos)	25	185	280	115	80	55	0	115
Govt. Tubewells (Nos)	1	0	0	1	1	0	125	2
Canal (kms)	0	1.2	0	0	1	0	0	0
Others (Wells)	0	0	0	0	0	0	0	0

Table 4.4 deals with the classification of workers in different categories. Over 70 per cent are engaged in agriculture and allied activities while others are mainly labourers. Thus not much of concentration is found in other occupations

Table 4.4: Workers and their classification

[illegible]

In some of the villages new activities have emerged after the construction of roads. In as many as five villages primary schools were constructed and one has a PHC. The other activity to come up in the public sector is the setting up of an Aanganwadi Centre while in one village a private clinic has been opened by a doctor (Table 4.5).

Table 4.5: Details of New Activities

	Gadana	Behusa	Chabaila	Bhaksa	Sihorwa	Loniya	Pakadiyar	Mudera
Primary Schools	√	√	--	--	√	√	--	√
Upper Primary School	--	--	--	--	--	--	--	--
PHC	--	--	√	--	--	--	--	--
Private Clinic	--	√	--	--	--	--	--	--
Bank Branch	--	--	--	--	--	--	--	--
Bus Station	--	--	--	--	--	--	--	--
Wine Shop	--	--	--	--	--	--	--	--
Aanganwadi Centre	--	√	--	--	--	--	--	--

Although not much of additional commercial activity has been observed in the villages after road construction but some of the newly emerging ones or those where the numbers have increased are tea stalls, general shops, cycle repair work and tailoring shops (Table 4.6). In fact under the given circumstances these villages do not have the potential for opening up of too many new activities or even in increasing those which already exist. However, a change is certainly visualized and could be the indicator that with passage of time the situation could improve further.

Table 4.6: Details of Commercial Activities

Details	Before PMGSY							
	Gadana	Behusa	Chabaila	Bhaksa	Sihorwa	Loniya	Pakadiyar	Mudera
Tea Shop	0	0	0	1	0	0	0	0
Sweet Shop	0	0	0	0	0	0	0	0
General Shop	0	1	3	9	4	2	5	2
Cycle Repair Shop	0	0	3	2	1	1	1	1
Scooter/Motor Cycle Repair Shop	0	0	1	0	0	0	0	0
Jeep/Car/Tractor repair Shop	0	0	0	0	0	0	0	0
Agricultural Implements Shop	0	0	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	0	0	0	0	0	0
Electronic Shop	0	0	0	0	0	0	0	0
TV/Radio Repair Shop	0	0	0	0	0	0	0	0
Tailor	0	2	7	1	0	3	0	2
Industrial enterprises	0	1	0	0	0	0	0	0
Others	1	0	0	8	0	0	0	0
Details	After PMGSY							
	Gadana	Behusa	Chabaila	Bhaksa	Sihorwa	Loniya	Pakadiyar	Mudera
Tea Shop	0	0	0	4	1	2	0	3
Sweet Shop	0	0	0	0	0	0	0	0
General Shop	3	2	7	11	5	3	9	6
Cycle Repair Shop	1	1	5	2	1	1	3	1
Scooter/Motor Cycle Repair Shop	0	0	2	0	0	0	0	0
Jeep/Car/Tractor repair Shop	0	0	0	0	0	0	0	0
Agricultural Implements Shop	0	0	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	0	0	0	0	0	1
Electronic Shop	0	0	0	0	0	0	2	0
TV/Radio Repair Shop	0	0	1	0	0	0	0	0
Tailor	2	2	7	2	0	4	2	2
Industrial enterprises	0	1	0	0	0	0	0	0
Others	1	0	0	3	0	0	0	0

Table 4.6 (contd....)

	Change							
Tea Shop	0	0	0	3	1	2	0	3
Sweet Shop	0	0	0	0	0	0	0	0
General Shop	3	1	4	2	1	1	4	4
Cycle Repair Shop	1	1	2	0	0	0	2	0
Scooter/Motor Cycle Repair Shop	0	0	1	0	0	0	0	0
Jeep/Car/Tractor repair Shop	0	0	0	0	0	0	0	0
Agricultural Implements Shop	0	0	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	0	0	0	0	0	1
Electronic Shop	0	0	0	0	0	0	2	0
TV/Radio Repair Shop	0	0	1	0	0	0	0	0
Tailor	2	0	0	1	0	1	2	0
Industrial enterprises	0	0	0	0	0	0	0	0
Others	0	0	0	-5	0	0	0	0

As was observed in the other two districts, the construction of an all-weather road in these villages have provided the incentive to people to purchase vehicles of different types. In all the villages the number of cycles as well as two-wheelers has gone up. The other automated vehicles fall in the high price range and so the increase is not very much except the villages of Behusa and Bhaksa which has witnessed a substantial increase in the number of tractors after the road was constructed (Table 4.7). However, the government buses are still not plying through any of these villages and the villagers have to move out in order to avail this facility.

Table 4.7: Details of Privately Owned Vehicles

Details	Gadaina	Bheusa	Chaibella	Bhaksa	Sihorwa	Lonia	Pakadiyar	Silhata Mundera
Cycle	65	82	175	318	60	85	45	60
Motor Cycle/Scooter	18	42	5	52	5	10	4	3
Car/Jeep	1	4	2	0	0	0	0	0
Tractor	7	16	6	19	2	2	5	0
Bus/Truck/Matador	0	2	0	0	0	0	0	0
Tempo	0	0	0	0	0	0	0	0
Bullock Cart/Dunlop Cart	11	49	0	3	15	1	4	0
After PMGSY								
Cycle	80	126	290	338	100	100	62	80
Motor Cycle/Scooter	28	92	13	106	12	20	7	9
Car/Jeep	3	10	4	2	0	0	1	0
Tractor	9	25	8	38	5	2	8	1
Bus/Truck/Matador	0	4	0	0	0	0	0	0
Tempo	0	0	1	1	0	0	0	0
Bullock Cart/Dunlop Cart	15	84	0	18	25	2	10	2
Change								
Cycle	15	44	115	20	40	15	17	20
Motor Cycle/Scooter	10	50	8	54	7	10	3	6
Car/Jeep	2	6	2	2	0	0	1	0
Tractor	2	9	2	19	3	0	3	1
Bus/Truck/Matador	0	2	0	0	0	0	0	0
Tempo	0	0	1	1	0	0	0	0
Bullock Cart/Dunlop Cart	4	35	0	15	10	1	6	2

The average distance which villagers have to cover in order to avail various facilities like education and health, marketing, cooperative societies, bank and post office etc. also have not seen much change over the years. In some villages however a few facilities have been set up like Aanganwadi centre, private clinic and Haat, etc. The village-wise details are presented in Annexure 4.1 at the end of the chapter.

**(ii) Brief Profile of the Control Villages**

One of the villages is relatively large with a total population of around 2248 while in the other it is 1152. The average size of the household is lower in the more populated village (6.33) as compared to the other (8.00 persons per household). Literacy levels are higher in Simra as compared to Jungle Kaudia where literacy among females was as low as 16.5 per cent (Table 4.8). Even among males it was only around 45 per cent.

**Table 4.8: Details of the Control Villages**

Details	Simra	Jungal Kaudia
Block	Chargaon	Jungal Kaudia
Village/Habitation	Simra	Shivala Tola
Details about Village/Habitation	Simra	Shivala Tola
Total Households	355	144
Total Population	2248	1152
Male	1185	603
Female	1063	549
<b>Literacy (%)</b>		
Male	50.38	45.27
Female	35.09	16.58
Avg Household Size	6.33	8.00

The area has good irrigation facilities and net area sown is fully irrigated. The main source of irrigation is private Tubewells. Shivala Tola also has two government Tubewells. The water table is not very low and so irrigation is facilitated. In Simra village area sown is almost 92 per cent of the area of the village but in Jungal Tola this percentage is around 79 only (see Table 4.9).

**Table 4.9: Details of Cultivated Land**

Details	Simra	Shivala Tola
Total Area (acre)	599	1809
Net Sown Area (acres)	550	1431
	91.82	79.10
Net Irrigated Area (Acres)	550	1431
	100.00	100.00
<b>Source of Irrigation</b>		
Private Tubewells (Nos)	20	109
Govt Tubewells (Nos)	0	2
Canal (kms)	0	0
Others	4	0

The villagers are mainly dependent on agriculture and allied activities as this is reflected in the fact that around three-fourth workers is engaged in this sector. Majority of those who are left are working as daily wage labourers. Consequently employment in other sectors is nominal (Table 4.10).

**Table 4.10: Workers and their Classification**

Classification of Workers	Present Situation	
	Simra	Shivala Tola
Cultivator	72.38	68.59
Labourers	21.58	18.67
Animal Husbandry	5.13	6.28
Mining	0.00	0.00
Small Industry	0.00	0.56
Other Industries	0.00	0.00
Construction	2.00	5.06
Business	0.00	0.56
Transport and Communication	0.91	0.28
Others	0.00	0.00
Total	100.00	100.00

The villages do not have facilities such as upper primary school, sub-centre or PHC, private clinic, bus station or a bank branch. In fact out of the two villages only Simra has a primary school. These facts show the relative backwardness of these villages.

**Details of Facilities Available**

Details	Simra	Shivala Tola
Primary Schools	v	--
Upper Primary School	--	--
PHC	--	--
Private Clinic	--	--
Bank Branch	--	--
Bus Station	--	--

If we look at these villages from the point of view of commercial activities which existed a few years earlier and the present situation only minor improvements can be seen between the two points of time. Neither of the two villages have a scooter/motor cycle repair centre or a repair centre for four wheelers and no facility for the repair of agricultural implements. This despite the fact that villagers are in possession of two wheelers, four wheelers and tractors. In fact no new commercial activity has started in any of the two villages. In Simara however there has been a minor increase in tea stalls, petty shops, tailoring and cycle repair works (Table 4.11).

Table 4.11: Details of Commercial Activities

Details	2-3 Years Earlier		Present Situation		Change	
	Simra	Shivala Tola	Simra	Shivala Tola	Simra	Shivala Tola
Tea Shop	1	0	2	0	1	0
Sweet Shop	0	0	1	0	1	0
General Shop	4	2	8	3	4	1
Cycle Repair Shop	2	1	3	1	1	0
Scooter/Motor Cycle Repair Shop	0	0	0	0	0	0
Jeep/Car/Tractor repair Shop	0	0	0	0	0	0
Agricultural Implements Shop	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	0	0	0	0
Electronic Shop	1	0	1	0	0	0
TV/Radio Repair Shop	1	0	2	0	1	0
Tailor	3	1	5	3	2	2
Industrial enterprises	0	0	0	0	0	0
Others	0	5	0	6	0	1

Although these villages do not have an all-weather road people are in possession of different vehicles and if we compare the present situation to that which existed a few years earlier we can witness an increase in privately owned vehicles. However, this increase is only marginal. The only noticeable increase is in two wheelers (Table 4.12).

Table 4.12: Details of Privately Owned Vehicles

Details	2-3 Years Earlier		Present Situation		Change	
	Simra	Shivala Tola	Simra	Shivala Tola	Simra	Shivala Tola
Cycle	108	88	120	121	12	33
Motor Cycle/Scooter	5	8	15	18	10	10
Car/Jeep	0	1	0	1	0	0
Tractor	1	5	2	8	1	3
Bus/Truck/Matador	0	0	0	0	0	0
Tempo	0	1	0	1	0	0
Bullock Cart/Dunlop Cart	4	0	4	2	0	2

In the last few years no improvement has been seen in terms of the distance which has to be covered by villagers to avail different facilities. Even today villagers of Simra have to travel 5 kms to reach the bus stand, to study in High School or above, reach PHC/CHC and the nearest market. In Shivala Tola too CHC/PHC, family planning centre, market, cooperative seed store, cooperative society and artificial insemination centres are beyond 5 kms and no change in situation has taken place over the last few years. For detailed information please see Annexure 4.2 at the end of the chapter.

## B. ANALYSIS OF THE HOUSEHOLD DATA OF SELECTED VILLAGES

### (i) General Information

In the case of Gorakhpur we have information of households selected from two different categories just like the other districts. Among both cultivating and non-cultivating households the majority of our respondents belonged to the OBC category. Among non-cultivating households around one-fourth was SC/ST households as well. As compared to both Rae Bareli and Jhansi the literacy was higher among the respondents as around one-third had studied upto High School/Intermediate level. If we add to it the percentage of Graduates and Post-Graduates their share was around 40 per cent (Table 4.13).

Table 4.13: Details Abut Respondents

Details	Cultivating Households	Non Cultivating Households	Total
<b>Caste</b>			
General	18 (11.46)	2 (2.41)	20 (8.33)
OBC	132 (84.08)	60 (72.29)	192 (80.00)
SC/ST	7 (4.46)	21 (25.30)	28 (11.67)
Total	157 (100.00)	83 (100.00)	240 (100.00)
<b>Average Age</b>	49.52	43.8	47.54
<b>Education</b>			
Illiterate	32 (20.38)	16 (19.28)	48 (20.00)
Literate	20 (12.74)	10 (12.05)	30 (12.50)
Upper Primary	41 (26.11)	20 (24.10)	61 (25.42)
HS/Intermediate	48 (30.57)	31 (37.35)	79 (32.92)
Graduate	12 (7.64)	5 (6.02)	17 (7.08)
Post Graduate	4 (2.55)	1 (1.20)	5 (2.08)
Total	157 (100.00)	83 (100.00)	240 (100.00)
<b>Primary Occupation</b>			
Agriculture/Animal Husbandry	157 (100.00)	0 (0.00)	157 (65.42)
Small/Big Shop	0 (0.00)	22 (26.51)	22 (9.17)
Self Employment	0 (0.00)	42 (50.60)	42 (17.50)
Manufacturing	0 (0.00)	17 (20.48)	17 (7.08)
Service	0 (0.00)	2 (2.41)	2 (0.83)
Total	157 (100.00)	83 (100.00)	240 (100.00)

If we look at the structure of the households, males accounted for around 55 per cent of the total population. Around one-third of the population was concentrated in the age group of upto 15 years and a similar proportion in the 15-35 year age group. The overall average size of the household worked out to be around 7.5. From the point of view of educational attainment slightly over one-third had studied upto the upper primary level and another 20 per cent had passed High School or Intermediate. Around one-third constituted the workforce (Table 4.14). Their work status and both primary and secondary occupations are also indicated in Table 4.14.

Table 4.14: Details About Households

Details	Cultivating Households	Non Cultivating Households	Total
<b>Sex</b>			
Male	686 (54.92)	307 (54.05)	993 (54.65)
Female	563 (45.08)	261 (45.95)	824 (45.35)
Total	1,249 (100.00)	568 (100.00)	1,817 (100.00)
Average Size of Household	7.96	6.84	7.57
<b>Age Group (Yrs)</b>			
0 to 15	429 (34.35)	224 (39.44)	653 (35.94)
15 to 35	450 (36.03)	184 (32.39)	634 (34.89)
35 to 60	278 (22.26)	114 (20.07)	392 (21.57)
Above 60	92 (7.37)	46 (8.10)	138 (7.59)
Total	1,249 (100.00)	568 (100.00)	1,817 (100.00)
<b>Educational Level</b>			
Illiterate	250 (20.02)	147 (25.88)	397 (21.85)
Literate	49 (3.92)	18 (3.17)	67 (3.69)
Upper Primary	453 (36.27)	210 (36.97)	663 (36.49)
HS/Intermediate	265 (21.22)	106 (18.66)	371 (20.42)
Graduate	84 (6.73)	13 (2.29)	97 (5.34)
Post Graduate	16 (1.28)	1 (0.18)	17 (0.94)
Others	132 (10.57)	73 (12.85)	205 (11.28)
Total	1,249 (100.00)	568 (100.00)	1,817 (100.00)
<b>Working Status</b>			
Child	134 (10.73)	72 (12.68)	206 (11.34)

Table 4.14 (contd....)

Student	397	159	556
	(31.79)	(27.99)	(30.60)
Working	409	220	629
	(32.75)	(38.73)	(34.62)
Housewife	277	96	373
	(22.18)	(16.90)	(20.53)
Pensioner	1	0	1
	(0.08)	(0.00)	(0.06)
Old/Handicapped	31	21	52
	(2.48)	(3.70)	(2.86)
Total	1,249	568	1,817
	(100.00)	(100.00)	(100.00)
<b>Main Occupation</b>			
Agriculture/AH	311	69	380
	(76.23)	(31.22)	(60.41)
Agricultural Labour	0	3	3
	(0.00)	(1.36)	(0.48)
Non Agricultural Labour	17	20	37
	(4.17)	(9.05)	(5.88)
Shop/Business	3	30	33
	(0.74)	(13.57)	(5.25)
Manufacturing	5	20	25
	(1.23)	(9.05)	(3.97)
Job	71	26	97
	(17.40)	(11.76)	(15.42)
Service Sector	0	44	44
	(0.00)	(19.91)	(7.00)
Others	1	9	10
	(0.25)	(4.07)	(1.59)
Total	408	221	629
	(100.00)	(100.00)	(100.00)
<b>Secondary Occupation</b>			
Agriculture/AH	22	54	76
	(38.60)	(77.14)	(59.84)
Agricultural Labour	5	2	7
	(8.77)	(2.86)	(5.51)
Non Agricultural Labour	24	13	37
	(42.11)	(18.57)	(29.13)
Shop/Business	1	0	1
	(1.75)	(0.00)	(0.79)
Manufacturing	0	1	1
	(0.00)	(1.43)	(0.79)
Job	2	0	2
	(3.51)	(0.00)	(1.57)
Service Sector	1	0	1
	(1.75)	(0.00)	(0.79)
Others	2	0	2
	(3.51)	(0.00)	(1.57)
Total	57	70	127
	(100.00)	(100.00)	(100.00)

## (ii) Agricultural Situation and Livestock Ownership

The average land holding size among cultivating households varied between 1.48 to 8.18 acres. Out of this maximum area is under cultivation and all three category cultivators had fully irrigated land under cultivation (Table 4.15).

Table 4.15: Details of Land Holding (Acres)

Details	Below 2.5	2.5 to 5.0	Above 5.0	Total
Avg Overall Land Holding	1.48	3.61	8.18	3.48
Average Size of Cultivation	1.42	3.59	7.84	3.45
Average Size of Irrigation	1.42	3.58	7.84	3.45

Wheat and paddy are the main crops being cultivated in these villages. The area under pulses, oilseeds etc. is quite low. Thus we may say that the cultivators are mainly dependent on these two crops. However, if we compare the area under cultivation before the road under PMGSY was constructed and the present situation there is some marginal decline in area under both crops among the cultivators having below 2.5 acres of land and those having between 2.5 to 5.0 acres. Among the highest land holding size cultivators there has been a decline in area under paddy while area under wheat has registered some increase although the change is not very high. The only crop which has registered an increase in all three categories of households is mustard (Table 4.16).

Table 4.16: Average Area Under Each Crop Per HH (Acres)

Crops	Before PMGSY				After PMGSY			
	Below 2.5	2.5 to 5.0	Above 5.0	Total	Below 2.5	2.5 to 5.0	Above 5.0	Total
Wheat	1.35	2.57	4.97	3.07	1.39	2.53	5.33	3.17
Paddy	1.30	2.43	4.35	2.76	1.28	2.14	3.98	2.47
Maize	0.07	0.10	0.18	0.12	0.00	0.04	0.05	0.03
Arhar	0.00	0.01	0.18	0.06	0.00	0.01	0.06	0.02
Chana	0.01	0.02	0.09	0.04	0.00	0.00	0.12	0.04
Other Pulses	0.25	0.25	0.76	0.41	0.16	0.26	0.70	0.37
Other Foodgrains	0.02	0.06	0.09	0.06	0.01	0.05	0.06	0.04
Mustard	0.31	0.43	1.22	0.64	0.24	0.54	1.12	0.64
Other Oil Seeds	0.05	0.12	0.28	0.15	0.02	0.18	0.26	0.16
Potato	0.06	0.13	0.34	0.17	0.06	0.15	0.29	0.17
Vegetables	0.00	0.00	0.04	0.01	0.00	0.00	0.03	0.01
Sugarcane	0.03	0.10	0.30	0.14	0.00	0.03	0.03	0.02

Over the years the productivity of different crops has registered an increase. There are however crops such as other pulses and other oilseeds where productivity levels have declined. The productivity of wheat and paddy has increased by around 11 and 9 per cent respectively, if we compare the same to the productivity of a few years earlier. However, among the different size categories of cultivators the productivity levels vary and even changes may not be in the same direction (Table 4.17).

Table 4.17: Crop-Wise Productivity (Qtl/Acres)

Crops	Before PMGSY				After PMGSY			
	Below 2.5	2.5 to 5.0	Above 5.0	Total	Below 2.5	2.5 to 5.0	Above 5.0	Total
Wheat	9.74	10.47	10.30	10.26	11.32	11.28	11.43	11.36
Paddy	12.04	11.70	11.13	11.47	12.00	12.77	12.33	12.42
Maize	3.25	4.67	4.29	4.23	8.00	4.00	6.00	4.99
Arhar	5.00	6.00	4.39	4.52	4.00	4.44	4.59	4.55
Chana	3.00	4.17	3.25	3.41	0.00	6.25	3.27	3.35
Other Pulses	8.92	3.71	5.40	5.65	3.62	4.26	4.41	4.26
Mustard	7.94	23.02	2.92	8.73	12.83	3.72	3.66	4.73
Other Oil Seeds	6.20	6.69	6.58	6.58	7.00	6.34	6.35	6.37
Potato	47.43	77.48	79.40	75.79	59.34	80.83	81.75	78.87
Vegetables	0.00	0.00	45.00	45.00	0.00	0.00	45.33	45.33
Sugarcane	221.43	209.92	184.53	193.82	120.00	198.29	236.36	212.68

The availability of an all-weather road and also the slight increase in the yield rates of crops has had a positive impact on the proportion of the total produce which the cultivators are now in a position to sell in the market. For example the lowest category cultivators were on an average selling round 31 and 60 per cent of their total output of wheat and paddy respectively before roads were constructed. This percentage now stands at around 34 and 64 per cent respectively. In the case of other crops also a general increase is observed in the proportion of sale to total output among different land holding category cultivators (Table 4.18) although there are variations and in some cases sale may have also declined.

Table 4.18: Crop-Wise Sale as Per cent to Output

Crops	Before PMGSY				After PMGSY			
	Below 2.5	2.5 to 5.0	Above 5.0	Total	Below 2.5	2.5 to 5.0	Above 5.0	Total
Wheat	30.97	52.26	69.73	57.95	33.92	55.19	74.28	62.07
Paddy	60.09	62.70	75.22	68.35	64.68	68.84	80.48	72.65
Maize	9.30	60.71	45.57	46.01	0.00	70.00	72.46	70.25
Arhar	0.00	66.67	69.04	67.26	0.00	50.00	64.29	60.24
Chana	66.67	60.00	60.81	61.03	0.00	0.00	87.06	82.94
Other Pulses	33.01	59.89	50.17	46.75	38.63	46.12	89.73	57.66
Other Food Grains	6.85	14.72	8.35	9.72	0.00	13.92	4.28	5.45
Mustard	6.00	5.37	57.30	15.89	44.44	43.97	57.71	50.06
Other Oil Seeds	88.16	73.69	83.43	80.82	75.19	83.33	88.02	85.43
Potato	38.77	63.09	76.55	70.42	47.87	57.71	73.96	66.15
Vegetables	0.00	0.00	84.44	84.44	0.00	0.00	88.24	88.24
Sugarcane	100.00	91.08	89.41	90.66	100.00	96.54	80.77	88.48

The relatively easier access to the market as a result of the all-weather road has provided the much needed incentive to the cultivators to increase the use of chemical fertilizers, better quality seeds, pesticides, etc. Since the area irrigated is very high they can afford to use higher quantities of these chemical fertilizers. As a result of this the cost of cultivation has registered

an increase. Among the lowest category households the cost has doubled because earlier they were using much less of these inputs. The change although visible among the higher land owners is also there although it is not as dramatic (Table 4.19).

Table 4.19: Cost of Production (Rs.)

Details	Per Acre Cost of Production	
	Before PMGSY	After PMGSY
Below 2.5	4952	6672
2.5 to 5.0	5077	7101
Above 5.0	4594	6220
Total	4812	6578

Over the years the prices of crops have also gone up. The cultivators however, complain that they are unable to obtain the same price which the large size land holders are in a position to obtain for their produce as the level of marketable surplus at their disposal is much less and so they do not possess the same bargaining power (Table 4.20).

Table 4.20: Crop-wise Prices per Quintal (Rs.)

Crops	Before PMGSY				After PMGSY			
	Below 2.5	2.5 to 5.0	Above 5.0	Total	Below 2.5	2.5 to 5.0	Above 5.0	Total
Wheat	667	674	653	666	935	935	938	936
Paddy	517	522	533	524	913	717	721	771
Maize	438	404	363	398	800	545	550	589
Arhar	1400	1500	1557	1537	1900	2500	2160	2171
Chana	1650	1575	1532	1558	0	2000	2150	2125
Other Pulses	1346	1380	1406	1382	1977	2000	2010	1998
Mustard	1409	1422	1451	1428	2194	2224	2226	2217
Other Oil Seeds	1472	1299	1496	1412	2425	2572	2583	2556
Potato	255	256	242	250	375	388	357	374
Sugarcane	100	86	91	90	110	110	115	112

The different types of livestock owned by the households include milch animals, bullocks and goats. Since people do not have large land holdings they are unable to keep too many animals. Another reason for low ownership is the relatively low household incomes so maintaining them is a problem considering the fact that their own average household size is as high as 7.5. On an average, therefore, each household has two milch animals and around four goats. Over the years this average has tended to decline (Table 4.21). However, the two points of time are only a few years apart and so one should not necessarily feel that there is a permanently declining trend in the ownership of livestock among the households.

Table 4.21: Details of Livestock Ownership (Average Number)

Details	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
Cow	1.01	1.22	1.08	1.08	1.22	1.13
Buffalo	1.44	1.53	1.46	1.30	1.47	1.34
Bullocks	1.76	1.64	1.73	1.41	1.29	1.37
He-Buffer	0.00	1.00	0.33	1.00	1.00	1.00
Young Stock	1.44	1.08	1.33	1.60	1.31	1.50
Goats	3.09	4.33	3.74	1.82	3.17	2.52

### (iii) Income of the Households

Agriculture and animal husbandry are the two main sources of income and if we look at all the households taken together they account for approximately 74 per cent of the total household income in Gorakhpur. The contribution of other sectors towards household income thus is proportionately much lower. In the case of non-agricultural households, however, agriculture and animal husbandry account for only around one-thirds of the total income and that is quite understandable because although these households might be cultivating some land, it is not their primary occupation. Till a few years earlier, when our selected villages were without an all weather road the agricultural households were earning round Rs.50 thousand per annum. As compared to them, income of non-cultivating households was much lower at around Rs.26 thousand per annum. As a result of the increased mobility of households to be able to sell in markets outside the village, and buy various inputs more conveniently, the income levels have registered a considerable increase. The present household incomes are around Rs.65 and Rs.36 thousand among cultivating and non-cultivating households. If we look at this increase in percentage terms then the cultivating households it works out to be 31 per cent. The non-cultivating households have fared even better with a 36 per cent increase. Taking all the households together the average monthly income of households have gone up from around Rs.3000 to Rs.4000. The substantial increase in income among cultivating households is because of contributions from agriculture and animal husbandry, whereas in the case of non-cultivating households other economic activities has been the sector where household incomes have seen a quantum jump from just below Rs.10 thousand per annum to almost Rs.17 thousand per annum. Even incomes from wages have contributed higher incomes and this again goes to show that the ability of wage earners to move out of the village to seek gainful employment has benefited these households. The only areas where incomes have shown a declining trend are from sale of meat and animals. This has been mainly because individuals have moved away

from this activity and taken up some other activity as it was not contributing much to the household income. Maintaining animals whether for sale of meat or even sale of animals is a relatively costly proposition as price of animals has gone up and has it become more expensive to buy fodder and other feed for them (Table 4.22). Table 4.22 provides a consolidated picture of all sectors which contribute towards the household income. In order to get detailed information from sectors like sale of milk, sale of animals and meat, other economic activities and other sources please see Annexures 4.3, 4.4, 4.5 and 4.6 at the end of the chapter.

**Table 4.22: Average Income of Households from Different Sources**

Average Income from Different Sectors	Before PMGSY			After PMGSY			Change in Income %		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
Agriculture	34568	5933	24665	45126	6662	31823	31	12	29
	(68.59)	(22.39)	(58.55)	(68.53)	(18.43)	(57.26)			
Animal Husbandry	3404	4203	3680	5941	4550	5460	75	8	48
	(6.75)	(15.86)	(8.73)	(9.02)	(12.59)	(9.83)			
Other Products of Animal Husb	1631	1664	1643	721	654	698	-56	-61	-58
	(3.24)	(6.28)	(3.90)	(1.10)	(1.81)	(1.26)			
Wages	1341	2551	1760	2198	3353	2597	64	31	48
	(2.66)	(9.63)	(4.18)	(3.34)	(9.28)	(4.67)			
Other eco. Activities	6008	9817	7325	5971	16742	9696	-1	71	32
	(11.92)	(37.05)	(17.39)	(9.07)	(46.32)	(17.45)			
Other Sources	3443	2327	3057	5889	4181	5298	71	80	73
<b>Avg. Per HH Income</b>	<b>50396</b>	<b>26494</b>	<b>42130</b>	<b>65845</b>	<b>36142</b>	<b>55572</b>	<b>31</b>	<b>36</b>	<b>32</b>

#### (iv) Employment Generation among Wage Earners

The presence of the all-weather road have certainly made it convenient for villagers to move out of the villages. This has had some impact on the wage earners. If we look at Table 4.23 we will find that in the case of agricultural wage earners there has not been a change in as far as their numbers are concerned both among males and females. However average number of days of employment has gone up from 73 to 78 days among males and from 58 to 63 days among females. In the case of the non-agricultural workers some increase is observed in the total number as well although the increase is not much. And there has also been a corresponding increase in average number of days during which they were employed. The increase in numbers as well as in the average days of employment is being reflected in the increased household income from wages as well.

Table 4.23: Person Days Employed by Labourers and Income

Details	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Ag Labour Male</b>						
Number	6	3	9	6	3	9
Avg No of Days	58	103	73	60	110	78
<b>Ag Labour Female</b>						
Number	1	1	2	1	1	2
Avg No of Days	50	65	58	50	75	63
<b>Non Ag Labour Male</b>						
Number	36	33	69	38	37	75
Avg No of Days	108	121	114	122	134	127
<b>Total</b>						
Number	43	37	80	43	31	74
Avg No of Days	100	118	108	114	130	121

## (v) Marketing of Various Products

The advantage of having an all-weather road has also had some impact on the marketing arrangements as well and this fact emerges if we look at the markets where villagers sold their products before the road was constructed and changes which are found after the road under PMGSY has been constructed. In the earlier period around 55 per cent of the marketable surplus of agriculture was sold within the village and only around 30 per cent was sold in Haats which were located beyond 3 kms of these villages. However, the road has reversed the entire scenario and at present around 55 per cent of the marketable surplus finds its way to these distant Haats (Table 4.24). There has, however, not been a change in the selling arrangements

Table 4.24: Details regarding marketing of products (in Percentage)

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Agriculture produce</b>						
Within village	52.88	64.89	55.53	22.29	43.75	27.04
Nearest Haat (with in 3 kms)	14.19	10.00	13.26	16.03	13.18	15.40
Haat beyond 3 kms	32.80	20.34	30.05	59.45	38.52	54.82
<b>Animal Husbandry Product</b>						
Within village	79.03	57.14	73.49	79.03	61.90	74.70
Nearest Haat (with in 3 kms)	1.61	0.00	1.20	0.00	0.00	0.00
Haat beyond 3 kms	3.23	23.81	8.43	3.23	23.81	8.43
<b>Manufacturing</b>						
Within village	0.00	45.00	45.00	0.00	34.50	34.50
Nearest Haat (with in 3 kms)	0.00	17.00	17.00	0.00	15.50	15.50
Haat beyond 3 kms	0.00	38.00	38.00	0.00	50.00	50.00
<b>Others</b>						
Within village	0.00	20.00	20.00	0.00	10.00	10.00
Nearest Haat (with in 3 kms)	0.00	0.00	0.00	0.00	0.00	0.00
Haat beyond 3 kms	0.00	80.00	80.00	0.00	90.00	90.00

of animal husbandry products over the years. But those engaged in manufacturing activity are selling a higher amount of their products in markets outside the village. The change is relatively less as compare to agricultural produce but it could be because the manufacturing sector is taking some time before its products can establish their demand outside. In any case the increase in itself is an indicator of the fact that roads have provided a much higher mobility and people are able to reach distant markets as well in the hope of obtaining better price for their products.

#### (vi) Ownership of Assets among Households

With a high percentage of households being dependent on agriculture as their primary occupation the commonly owned assets by them are various agricultural implements. Other assets include vehicles of different types and household assets such as radio/TV sets, mobiles/telephone, etc. The positive impact of the road on agricultural productivity has had a spill over effect on ownership pattern of agricultural implements. There has been a slight increase in ownership of tractor while that of ploughs and bullock carts has had a corresponding decrease. This indicates a change in the preferences of cultivators for modern implements. Even the ownership pattern of vehicles, TV sets and mobiles have gone up in the last few years by virtue of the fact that household incomes have registered an increase. All these aspects reflect on the gains which people are enjoying since the construction of the all-weather road in their villages (see Table 525).

Table 4.25: Details about Assets (Average Number)

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Ag Implements</b>						
Plough	1.15	1.08	1.14	1.00	0.81	0.96
Bullock cart	1.00	1.00	1.00	0.60	1.00	0.67
Tractor	0.91	0.80	0.90	1.00	1.00	1.00
Chaff Cutter	1.00	0.96	0.99	1.00	0.96	0.99
Others	1.03	1.04	1.03	1.05	1.04	1.05
<b>Means of Transport</b>						
Cycle	1.04	1.06	1.05	1.14	1.11	1.13
motor Cycle	0.79	0.50	0.72	1.02	1.00	1.01
Jeep	1.00	1.00	1.00	0.50	0.50	0.50
Others	0.60	0.00	0.38	1.00	1.00	1.00
<b>Non Ag Implements</b>						
Flour/Rice Mill	1.00	0.60	0.71	1.00	1.00	1.00
Oil Ghani	0.00	1.00	1.00	0.00	1.00	1.00
Others	0.00	0.00	0.00	0.00	1.00	1.00
<b>Household Assets</b>						
Radio	0.96	0.97	0.96	0.99	0.94	0.98
TV	0.78	0.71	0.77	1.00	1.00	1.00
Telephone	0.75	0.50	0.70	0.75	1.00	0.80
Mobile	0.32	0.32	0.32	1.06	1.00	1.04
Others	0.67	0.00	0.67	1.00	0.00	1.00
Total	0.90	0.84	0.88	1.02	1.00	1.01

### (vii) Saving in Travel Time

A smooth metal road facilitates movement of traffic. Not only is the journey less bumpy as compared to a kutcha road or even a kharanja but it also reduces travel time. This fact has been brought out when we enquired from our respondents about the time saved while they travel to the market place for either selling their products or for purchasing either inputs or other requirements of use at home. As Table 4.26 highlights, the time taken by various methods of transportation have been reduced. Since the roads constructed under PMGSY are 3 meters broad and roads may also pass through one or two habitations as well the speed can not be increased beyond a limit and this is reflected by the fact that time taken has improved, but not dramatically (Table 4.26).

Table 4.26: Time in Transportation (in Minutes)

Details	Before PMGSY	After PMGSY
Cycle	42	28
Bullock Cart	45	21
Dunlop Cart	39	34
Tempo	30	24
Tractor	47	42
Jeep	25	18

### (viii) Emergence of New Activities among Households

If we look at the commercial activities which have emerged after road construction we find that among the agricultural households no family member has ventured into making investment outside the activity in which they were already engaged in. Among non-agricultural households however we find that in around 15 per cent households some additional work has been taken up. The relatively low levels of income have limited the investment capacity of individuals. Moreover people do not even seem to be very enterprising to think of taking up new activities. As a result the new activities started are mainly petty shops. In one village an individual has started a tailoring shop while in another village one household has started the transport business (for details see Table 4.27).

Table 4.27: New Activities Initiated after Road Construction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	0 (0.00)	13 (15.66)	13 (5.42)
No	157 (100.00)	70 (84.34)	227 (94.58)
Total	157 (100.00)	83 (100.00)	240 (100.00)
If Yes than of What Type			
Shop	0 (0.00)	11 (84.62)	11 (84.62)
Transport	0 (0.00)	1 (7.69)	1 (7.69)

Table 4.27 (contd...)

Tailor	0	1	1
	(0.00)	(7.69)	(7.69)
Total	0	13	13
	(0.00)	(100.00)	(100.00)

**(ix) Improvement in the Availment of Educational and Medical Facilities**

While the direct advantages of the road can be visualized in terms of increased income, more days of wage employment, much easier access to the market, greater overall mobility as well as saving of time in traveling, there is another aspect where the availability of the road has played a significant role and facilitated the village community. These are with respect to availing education and medical facilities. The responses received from our respondents are self-explanatory and highlight this fact. Table 4.28 provides the views with respect to education and 4.29 as far as availing medical facilities are concerned.

Almost 88 per cent respondents feel that it has become more convenient for their children to avail educational facilities. Children find it convenient to attend schools which are not located within the village particularly schools from upper primary onwards. Even in the primary schools within the village going to school was rather inconvenient during the monsoons as the kutchra road became slushy and got water logged at many places. This inconvenience has been eliminated. Even the primary school teachers not residing within the village can now commute daily with a high degree of comfort. The road has also facilitated the Aanganwadi Centres (Table 4.28).

Table 4.28: Changes Observed in Field of Education after Road Construction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	147	64	211
	(93.63)	(77.11)	(87.92)
No	10	19	29
	(6.37)	(22.89)	(12.08)
Total	157	83	240
	(100.00)	(100.00)	(100.00)
<b>If Yes, how (Nos.)</b>			
Going to School	102	50	152
	(64.97)	(60.24)	(63.33)
Teachers have become regular	90	33	123
	(57.32)	(39.76)	(51.25)
Easy to avail higher education	98	32	130
	(62.42)	(38.55)	(54.17)
Aganwadi centre has opened	19	3	22
	(12.10)	(3.61)	(9.17)
Others	7	0	7
	(4.46)	(0.00)	(2.92)
Total Households	157	83	240

The response in the case of medical facilities is even higher and all respondents except for one feel that the road has been a big factor in making it easy to avail medical facilities either in terms of visiting the PHC/CHC or other government hospitals and even if they want to visit a private clinic located outside their village. It has also been very helpful in the sense that travel time has reduced and the smooth metal road makes it very comfortable if the seriously ill individuals have to be taken for consultation and treatment. To some extent even the regularity of the ANM/Asha has improved (Table 4.29).

Table 4.29: Changes Observed in Availing Medical Facilities After Road Construction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	157 (100.00)	82 (98.80)	239 (99.58)
No	0 (0.00)	1 (1.20)	1 (0.42)
Total	157 (100.00)	83 (100.00)	240 (100.00)
<b>If Yes, how (Nos)</b>			
Medical Facilities available within village	4 (2.55)	8 (9.64)	12 (5.00)
Asha/ANM come regularly	98 (62.42)	51 (61.45)	149 (62.08)
Reaching PHC is easy	123 (78.34)	69 (83.13)	192 (80.00)
Contacting private doctor easily	95 (60.51)	50 (60.24)	145 (60.42)
Reduction in cost of medicine	97 (61.78)	35 (42.17)	132 (55.00)
Reduction in cost of transportation on medical services	1 (0.64)	1 (1.20)	2 (0.83)
Total Households	157	83	240

**(x) Changes in the Flow of Traffic, Repair and Maintenance of Vehicles**

It was anticipated that the flow of traffic would definitely increase as a result of the all-weather road. Our survey team therefore spent eight hours to check the flow of traffic in each of our selected villages where road under PMGSY has been constructed. The details are given in Table 4.30. The maximum movement is obviously of cycles and scooters/motor cycles. This is expected as villages do not have many cars/tractors. Even movement of trucks is very limited. The discussion we had with respondents as well as other persons in the village revealed that a considerable increase has been observed in the flow of traffic since the road was constructed (Table 4.30).

Table 4.30: Details about Traffic Flow

Details	Gadaina	Bheusa	Chaibella	Bhaksa	Sihorwa	Lonia	Pakadidar	Silhata Mundera
<b>Incoming</b>								
Cycle	140	160	100	112	112	110	90	80
Scooter/Motor Cycle	44	84	24	60	82	64	46	24
Car/Jeep	4	12	0	2	4	4	0	4
Tractor	16	10	10	18	0	6	10	4
Bus	0	0	0	0	0	0	0	0
Truck	0	2	2	0	0	0	0	0
Tonga	0	0	0	0	0	0	0	0
Rickshaw Trolley	6	8	0	0	0	0	0	0
Bullock Cart	4	6	4	22	14	8	0	0
Vikram	0	4	2	2	2	2	4	10
<b>Outgoing</b>								
Cycle	128	174	70	148	156	130	104	100
Scooter/Motor Cycle	48	100	44	88	86	56	50	30
Car/Jeep	2	20	0	4	6	2	0	8
Tractor	12	10	14	14	0	4	14	8
Bus	0	0	0	0	0	0	0	0
Truck	0	8	4	0	0	0	0	0
Tonga	0	0	0	0	0	0	0	0
Rickshaw Trolley	6	4	0	0	0	0	0	0
Bullock Cart	4	14	6	16	2	12	0	0
Vikram	0	8	0	2	2	2	2	10

Not only has the road led to increased flow of traffic but it has even made it convenient for owners of vehicles in the sense that a smooth road reduces the wear and tear of the tyres and in the case of scooters/motor cycles and cars etc. the cost of fuel has declined. In fact the cost of repair and maintenance has declined by around 8 per cent on an average (Table 4.31).

Table 4.31: Impact of Road on Repair/Maintenance of Vehicles on Fuel Cost

Details	Cultivating Households	Non Cultivating Households	Total
Yes	157	83	240
	(100.00)	(100.00)	(100.00)
No	0	0	0
	(0.00)	(0.00)	(0.00)
Total	157	83	240
	(100.00)	(100.00)	(100.00)
<b>If yes how much (in %)</b>			
Repair and Fuel Cost	9.63	5.35	8.15

These villagers now have the luxury of traveling to places outside the village by tempo and shared jeeps which have started plying since the roads were constructed. This has facilitated those who do not own their own means of transportation. In some cases school buses are also entering the villages now to pick up school going children. On the whole therefore road has made quite an impact on transport services.

The increase in flow of traffic and mobility among the villagers is for a variety of reasons. The most important being visits to the market either for sale of goods or purchase of various items. The other aspects include going to school, visiting the doctor, to meet social obligations or simply for the sake of entertainment (Table 4.32). On an average a villager is making around 10 visits per month from the agricultural households. The frequency of visit is less when we look at the non-agricultural households.

Table 4.32: Main Purpose for Going Out of Village

Details	Cultivating Households	Non Cultivating Households	Total
Sale/Business	156	83	239
	(99.36)	(100.00)	(99.58)
Purchasing	156	83	239
	(99.36)	(100.00)	(99.58)
Education Purpose	157	82	239
	(100.00)	(98.80)	(99.58)
Health Facility	156	77	233
	(99.36)	(92.77)	(97.08)
Social Visits	140	64	204
	(89.17)	(77.11)	(85.00)
Entertainment	55	25	80
	(35.03)	(30.12)	(33.33)
Others	14	3	17
	(8.92)	(3.61)	(7.08)
Total Households	157	83	240
<b>Frequency of Traveling (Per month)</b>			
Within 5 Kms	10.18	6.76	8.47
5 to 10 Kms	9.37	5.20	7.73
Above 10 kms	9.9	5.57	7.56

#### (xi) Perception of Respondents

We enquired from our respondents about their views about the positives which have emerged as a result of the road in terms of improvement at the level of the village itself and in the living conditions of the individuals themselves. We therefore took their opinion in both these aspects and also asked them to express their views about the PMGSY scheme and suggestions, if any, which could facilitate in making the scheme more effective.

Table 4.33 indicates the improvements which respondents feel can be visualized in the overall condition of the villages after road construction. It has become easy to market the produce of the villagers and also in the procurement of seeds and fertilizers and other inputs. The overall mobility of the people of the villages has gone up since time is saved while traveling and even the cost of repair and maintenance of vehicles as well as on fuel have reduced to some extent. The children of the village community find it easy to go out of their village for availing educational facilities. Moreover the road has been a big boon in the availment of medical facilities.

Table 4.33: Improvement in Overall Condition of Village

Details	Cultivating Households	Non Cultivating Households	Total
Procurement of Seed Fertilizer	109	61	170
	(69.43)	(73.49)	(70.83)
In marketing	120	66	186
	(76.43)	(79.52)	(77.50)
Saving of time in traveling	99	44	143
	(63.06)	(53.01)	(59.58)
Saving in Cost of traveling	64	30	94
	(40.76)	(36.14)	(39.17)
Improvement in education	25	19	44
	(15.92)	(22.89)	(18.33)
Improvement in availing health facilities	48	19	67
	(30.57)	(22.89)	(27.92)
Awareness is increased	163	88	251
	(103.82)	(106.02)	(104.58)
Any Other	0	1	1
	(0.00)	(1.20)	(0.42)
Total Households	157	83	240

As far as perception of the individuals about improvement in their own living conditions is concerned it is obvious that if the entire village is the ultimate gainer, the individual will automatically stand to gain as well. Almost 97 respondents agree that their living conditions have improved. This can be visualized in terms of increased incomes, the ability to move out relatively more easily for seeking employment, in the ownership pattern of means of transport and in seeking educational and medical facilities which are not available within the village (for details see Table 4.34).

Table 4.34: Changes in Living Condition

Details	Cultivating Households	Non Cultivating Households	Total
Yes	151	81	232
	(96.18)	(97.59)	(96.67)
No	6	2	8
	(3.82)	(2.41)	(3.33)
Total	157	83	240
	(100.00)	(100.00)	(100.00)
If yes then what type			
Education	98	41	139
	(62.42)	(49.40)	(57.92)
Health	91	49	140
	(57.96)	(59.04)	(58.33)
Increase in Income	109	39	148
	(69.43)	(46.99)	(61.67)

Table 4.34 (contd...)

Improvement in Living Condition	21	12	33
	(13.38)	(14.46)	(13.75)
Improvement in Transport	90	46	136
	(57.32)	(55.42)	(56.67)
Saving in Transportation Cost	34	16	50
	(21.66)	(19.28)	(20.83)
Total Households	157	83	240

A very high percentage of respondents are happy with the quality of roads which have been constructed under PMGSY in their villages. Similarly around 40 per cent are even satisfied with the existing condition and also are fully satisfied with the connectivity which has been provided. Their main concern, however, is with respect to repair and maintenance of the roads despite the fact that the work order has a built-in clause to ensure routine repair and maintenance to be undertaken by the contractor and for which some funds have also been allotted. The analysis of the other two districts too has indicated that repair and maintenance of roads is a neglected area of the PMGSY scheme (Table 4.35).

Table 4.35: Perception of Respondents about PMGSY

Details	Cultivating Households	Non Cultivating Households	Total
<b>How was the quality of road</b>			
Very Good	46	21	67
	(29.30)	(25.30)	(27.92)
Good	93	56	149
	(59.24)	(67.47)	(62.08)
Average	17	5	22
	(10.83)	(6.02)	(9.17)
Poor	1	1	2
	(0.64)	(1.20)	(0.83)
Total	157	83	240
	(100.00)	(100.00)	(100.00)
<b>How is its present condition</b>			
Very good	6	6	12
	(3.82)	(7.23)	(5.00)
Good	54	29	83
	(34.39)	(34.94)	(34.58)
Has deteriorated	97	48	145
	(61.78)	(57.83)	(60.42)
Total	157	83	240
	(100.00)	(100.00)	(100.00)
<b>Is connectivity appropriate</b>			
Yes	157	83	240
	(100.00)	(100.00)	(100.00)
No	0	0	0
	(0.00)	(0.00)	(0.00)
Total	157	83	240
	(100.00)	(100.00)	(100.00)

Table 4.35 (contd...)

Is repair and maintenance of road being done timely and properly			
Yes	18	14	32
	(11.46)	(16.87)	(13.33)
No	139	69	208
	(88.54)	(83.13)	(86.67)
Total	157	83	240
	(100.00)	(100.00)	(100.00)

It follows from the laxity shown in conducting timely repair and maintenance that the priority item in the suggestion column of the respondents focuses on need to ensure that corrective measures are taken so that all the roads are maintained on a regular basis. They are happy with connectivity as well as the fact that initial construction is being done after adhering to the norms laid down. But they would feel even more satisfied if their participation was ensured in the process of road construction and not limited to the initial phase only when survey work is undertaken (Table 4.36).

Table 4.36: Suggestions of Respondents About PMGSY

Details	Cultivating Households	Non Cultivating Households	Total
Maintenance of road	123	59	182
	(78.34)	(71.08)	(75.83)
Quality of Road	98	44	142
	(62.42)	(53.01)	(59.17)
Participation of Villagers	48	29	77
	(30.57)	(34.94)	(32.08)
Connectivity to main road	11	6	17
	(7.01)	(7.23)	(7.08)
Roads are according to Norms	62	36	98
	(39.49)	(43.37)	(40.83)
Brick soaling on either side of road	100	65	165
	(63.69)	(78.31)	(68.75)
Total Households	157	83	240

## C. ANALYSIS OF THE HOUSEHOLDS OF CONTROL VILLAGES

### (i) General Information

Caste-wise breakup of the households brings out the fact that 90 per cent of respondents from cultivating households were from OBC category. Their percentage was only 65 in case of non-cultivating households and around one-third were SC households. Literacy levels were reasonable since around one-fourth were illiterates while around 45 per cent had studied upto the upper primary level. The main occupation of non-cultivating respondents varied but a majority of them were in the self-employed category (Table 4.37).

Table 4.37: Details About Respondents

Details	Cultivating Households	Non Cultivating Households	Total
<b>Caste</b>			
General	3 (7.50)	1 (5.00)	4 (6.67)
OBC	36 (90.00)	12 (60.00)	48 (80.00)
SC/ST	1 (2.50)	7 (35.00)	8 (13.33)
Total	40 (100.00)	20 (100.00)	60 (100.00)
Average Age	46.65	40.55	44.62
<b>Educational Status</b>			
Illiterate	9 (22.50)	5 (25.00)	14 (23.33)
Literate	4 (10.00)	4 (20.00)	8 (13.33)
Upper Primary	19 (47.50)	8 (40.00)	27 (45.00)
HS/Inter	7 (17.50)	3 (15.00)	10 (16.67)
Graduate	1 (2.50)	0 (0.00)	1 (1.67)
Total	40 (100.00)	20 (100.00)	60 (100.00)
<b>Occupational Status</b>			
Agriculture/Animal Husbandry	40 (100.00)	0 (0.00)	40 (66.67)
Small/Big Shop	0 (0.00)	6 (30.00)	6 (10.00)
Self employed	0 (0.00)	10 (50.00)	10 (16.67)
Manufacturing	0 (0.00)	3 (15.00)	3 (5.00)
Job	0 (0.00)	1 (5.00)	1 (1.67)
Total	40 (100.00)	20 (100.00)	60 (100.00)

As far as their households are concerned the average size of the households worked out to be around 7.5. There was not much of a difference in the size of the household between cultivating and non-cultivating households. The literacy levels of the households followed a pattern quite similar to those of the respondents with just below 24 per cent being illiterate and around 41 per cent having studied upto the upper primary level. The workforce accounted for around 34 per cent of the total population. For details pertaining to their primary and secondary occupations please refer to Table 4.38.

Table 4.38: Details about Households

Details	Cultivating Households	Non Cultivating Households	Total
<b>Sex</b>			
Male	175 (59.93)	81 (51.92)	256 (57.14)
Female	117 (40.07)	75 (48.08)	192 (42.86)
Total	292 (100.00)	156 (100.00)	448 (100.00)
<b>Age</b>			
Below 15	106 (36.30)	66 (42.31)	172 (38.39)
15 to 35	103 (35.27)	60 (38.46)	163 (36.38)
35 to 60	54 (18.49)	22 (14.10)	76 (16.96)
Above 60	29 (9.93)	8 (5.13)	37 (8.26)
Total	292 (100.00)	156 (100.00)	448 (100.00)
<b>Educational Status</b>			
Illiterate	66 (22.60)	41 (26.28)	107 (23.88)
Literate	10 (3.42)	6 (3.85)	16 (3.57)
Upper Primary	124 (42.47)	60 (38.46)	184 (41.07)
HS/Inter	43 (14.73)	23 (14.74)	66 (14.73)
Graduate	11 (3.77)	1 (0.64)	12 (2.68)
Others	38 (13.01)	25 (16.03)	63 (14.06)
Total	292 (100.00)	156 (100.00)	448 (100.00)
<b>Working Status</b>			
Child	38 (13.01)	26 (16.67)	64 (14.29)
Student	89 (30.48)	46 (29.49)	135 (30.13)
Working	95 (32.53)	58 (37.18)	153 (34.15)
Unemployed	2 (0.68)	0 (0.00)	2 (0.45)
Housewife	53 (18.15)	23 (14.74)	76 (16.96)
Pensioner	1 (0.34)	0 (0.00)	1 (0.22)
Old	14 (4.79)	3 (1.92)	17 (3.79)
Total	292 (100.00)	156 (100.00)	448 (100.00)

Table 4.38 (contd....)

<b>Primary Occupation</b>			
Agriculture/Animal Husbandry	84	9	93
	(86.60)	(15.52)	(60.00)
Non Agr Labour	0	6	6
	(0.00)	(10.34)	(3.87)
Shop/Business	0	10	10
	(0.00)	(17.24)	(6.45)
Manufacturing	0	4	4
	(0.00)	(6.90)	(2.58)
Job	12	10	22
	(12.37)	(17.24)	(14.19)
Services	0	16	16
	(0.00)	(27.59)	(10.32)
Others	1	3	4
	(1.03)	(5.17)	(2.59)
Total	97	58	155
	(100.00)	(100.00)	(100.00)
<b>Occupation Secondary</b>			
Agriculture/Animal Husbandry	2	25	27
	(18.18)	(100.00)	(75.00)
Agr Labour	1	0	1
	(9.09)	(0.00)	(2.78)
Non Agr Labour	6	0	6
	(54.55)	(0.00)	(16.67)
Job	1	0	1
	(9.09)	(0.00)	(2.78)
Others	1	0	1
	(9.09)	(0.00)	(2.78)
Total	11	25	36
	(100.00)	(100.00)	(100.00)

**(ii) Agricultural Situation and Livestock Ownership**

The average size of land owned by the smallest category was 1.20 acres of which 1.18 acres is being cultivated. The corresponding figures for the next two categories are 3.60 and 9.31 acres respectively. The land under cultivation of all three categories is fully irrigated (Table 4.39).

Table 4.39: Details of Land Holding (Acres)

Details	Below 2.5	2.5 to 5.0	Above 5.0	Total
Avg Overall Land Holding	1.20	3.60	9.31	3.46
Average Size of Cultivation	1.18	3.47	8.71	3.30
Average Size of Irrigation	1.18	3.47	8.71	3.30

The main crops being cultivated in the district are wheat and paddy and this is true even in our control villages. Other crops such as pulses, oilseeds and potato are also cultivated in

these villages but area under none of these crops is significant. Moreover, if we look at area under cultivation at present and compare it with area under the same crop prior to road construction hardly any change is noticeable. The fluctuations observed in area are only marginal and this brings out the fact that cropping pattern has not changed over the last few years (Table 4.40).

Table 4.40: Average Area Under Crops Per Household (acres)

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	1.18	2.59	6.67	3.60	1.18	2.59	6.38	3.52
Paddy	1.18	1.55	2.67	1.81	1.18	1.29	2.00	1.47
Maize	0.00	0.03	0.00	0.01	0.00	0.03	0.00	0.01
Other Pulses	0.03	0.28	0.38	0.24	0.03	0.18	0.29	0.17
Other Food Grains	0.02	0.19	0.25	0.16	0.04	0.16	0.29	0.16
Mustard	0.13	0.44	1.17	0.57	0.11	0.55	1.48	0.70
Potato	0.08	0.78	0.46	0.48	0.11	0.12	0.44	0.21
Vegetables	0.00	0.06	0.21	0.09	0.00	0.06	0.25	0.10

Although there had not been a significant change in area under different crops over the two points of time but one positive aspect of agricultural production has been a rising tendency in yield rates of different crops. Change has not been very dramatic but all the same some improvement is visible in wheat as well as paddy which are the main crops of the area. The only crops which have witnessed a decline in productivity are other vegetables besides potato (Table 4.41).

Table 4.41: Crops wise Productivity (Qtls/Acre)

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	10.42	10.22	9.06	9.61	10.97	10.81	9.52	10.13
Paddy	12.66	12.24	11.44	11.98	12.94	13.22	13.42	13.23
Other Pulses	4.00	3.79	3.32	3.57	4.00	3.60	3.50	3.56
Other Food Grains	4.00	4.50	5.00	4.72	4.00	4.00	5.71	4.92
Mustard	3.34	3.08	2.86	2.97	4.02	2.49	2.63	2.65
Potato	90.30	15.36	76.18	36.94	87.73	75.90	75.05	77.21
Vegetables	0.00	82.00	50.80	59.71	0.00	81.00	39.00	49.50

If we look at the sale of various crops as a percentage of total output of the crop we find fluctuation among different land holding size groups as well as between the two points of time. It is observed that a major proportion of the total output was being sold in the market even before road under PMGSY was constructed and so the amount of total which is being sold at present reflects only marginal changes. In some crops total sale has increased while in others it has declined marginally as is evident from Table 4.42.

Table 4.42: Sale as % to Total Output

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	45	57	79	67	48	58	78	67
Paddy	60	107	65	79	62	73	77	72
Maize	0	0	0	0	0	0	0	0
Other Pulses	63	80	74	76	58	77	78	76
Other Food Grains	50	88	87	86	75	80	78	78
Mustard	19	37	66	53	19	34	74	58
Potato	74	82	91	87	76	75	92	85
Vegetables	0	91	87	89	0	91	94	93

Over the years the cultivators have increased the use of inputs in the cultivation of different crops. The use of inputs such as fertilizers, pesticides, high yielding varieties of seeds, etc. have gone up and this is reflected in the cost of cultivation per acre showing an overall increase from Rs.4429 in the period before road construction to the present time figure of Rs.5401 which is an increase of around 22 per cent. This increase in cost of cultivation is found in all the three land holding size categories taken by us for analysis. In the case of our non-cultivating households our sample included only those having below 2.5 acres of land (Table 4.43).

Table 4.43: Cost of Production (rupees)

Details	Per Acre Cost of Prod	
	2-3 Years Before	Present Situation
<b>Per Household</b>		
Below 2.5	5434	6800
2.5 to 5.0	4955	5860
Above 5.0	3814	4686
Total	4429	5401

Table 4.44 provides some idea about the type of prices which cultivators have been getting for different crops grown by them. Over the years there has been some price escalation as is evident from the table.

Table 4.44: Prices of Different Crops (Rs/Quintal)

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	734	733	738	735	921	930	938	930
Paddy	439	386	420	412	468	352	290	368
Maize	0	106	0	43	0	144	0	58
Other Pulses	106	519	411	363	154	488	539	403
Other Food Grains	42	95	88	77	52	114	100	91
Mustard	811	1310	1362	1176	874	1821	1946	1574
Potato	108	133	115	120	182	193	170	183
Vegetables	0	50	63	39	0	74	92	57

Livestock owned by our households usually include milch animals, bullocks and sheep. However, average ownership per household is not much and each household generally has one cow and one buffalo. Over the years not much change has been seen in the ownership pattern among these households (Table 4.45).

Table 4.45: Details of Livestock Ownership (average Number)

Details	2-3 Years Before			Present Situation		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
Cow	1.10	0.83	1.04	1.20	0.83	1.12
Buffalo	1.37	1.09	1.27	1.21	0.91	1.10
Bullocks	1.75	1.00	1.60	1.25	0.00	1.00
Young Stock	0.82	1.13	0.93	0.96	1.07	1.00
Goats	4.13	2.33	3.64	2.50	1.67	2.27
Poultry	0.00	1.00	1.00	0.00	1.00	1.00

### (iii) Income of the Households

If we look at the household income being generated from different sources it is observed that among the cultivating households over two-thirds of the total household income is from agriculture alone and animal husbandry sector contributes another 10 per cent. Thus, the share of income from other sources is relatively low. On the contrary the income from agriculture and animal husbandry taken together in the case of non-cultivating households is below 20 per cent. Their main source of household income being other economic activities whose share is roughly two-thirds of the total household income. The income of cultivating households is higher than those of non-cultivating households. However, if we look at their incomes before road construction and the present situation the gap in income has tended to narrow down. Whether we look at cultivating or non-cultivating households income from different sources over the years have registered an increasing trend. The only exception is the income from sale of meat and animals. On the whole, therefore, average household incomes have gone up from around Rs.36 thousand to Rs.46 thousand per annum indicating an increase of approximately 27 per cent. The corresponding increase among cultivating and non-cultivating households was around 24 and 31 per cent respectively (Table 4.46). Separate tables regarding details of income from sale of milk, sale of meat, etc., other economic activities and from other sources such as money order, pension, etc. are given in Annexures 4.7, 4.8, 4.9 and 4.10 at the end of the chapter.

Table 4.46: Average Household Income from Different Sources

Average Income from Different Sectors	2-3 Years Before			Present Situation			Change in Income %		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
Agriculture	27978	5342	20432	35990	6053	26011	29	13	27
	(70.73)	(17.66)	(56.05)	(72.73)	(15.33)	(56.36)			
Animal Husbandry	3744	693	2727	3991	2310	3430	6.58	233.57	25.79
	(9.47)	(2.29)	(7.48)	(8.06)	(5.85)	(7.43)			
Other Products of Animal Husb	1675	850	1400	405	600	470	-75.82	-29.41	-66.43
	(4.23)	(2.81)	(3.84)	(0.82)	(1.52)	(1.02)			
Wages	735	1841	1104	1491	3150	2044	102.79	71.08	85.16
	(1.86)	(6.09)	(3.03)	(3.01)	(7.98)	(4.43)			
Other eco. Activities	3800	20026	9209	5500	24769	11923	44.74	23.69	29.48
	(9.61)	(66.20)	(25.26)	(11.12)	(62.73)	(25.84)			
Other Sources	1623	1500	1582	2105	2600	2270	29.74	73.33	43.52
	(4.10)	(4.96)	(4.34)	(4.25)	(6.59)	(4.92)			
Avg. Per HH Income	39555	30251	36453	49482	39482	46148	25	31	27

## (iv) Employment Generation Among Wage Earners

Improved mobility could have led to an improvement in the ability to get gainful employment for longer periods of time. However, the villagers residing in our control villages have been denied this opportunity. However, need to increase their household incomes has led to the workers work as wage earners for more time in a year at present as compared to a few years ago. In fact the actual number of wage earners has remained the same but the average days of employment done by them have registered an increase and this can be seen in Table 4.47. The advantage of remaining employed for longer period is reflected in the relatively higher wage earnings of the household.

Table 4.47: Person days Employed by labourers and Income

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Ag Labour Male</b>						
Number	1	0	1	1	0	1
Avg No of Days	80	0	80	85	0	85
<b>Non Ag Labour Male</b>						
Number	6	6	12	6	6	12
Avg No of Days	91	138	112	108	152	123
<b>Total</b>						
Number	7	6	13	7	6	13
Avg No of Days	89	138	110	105	152	120

## (v) Marketing of Products

The disadvantage of not having a proper road in the village is very clear in the marketing arrangements of our households. About 2-3 years ago almost 50 per cent of the agricultural produce was sold in the market within the village. Even after a lapse of time the

proportion finding its way to markets outside the village has increased by only around 6 per cent. With respect to products of the animal husbandry sector the sale in Haats beyond 3 kms has been stopped altogether. It is only with respect to other products that even earlier all the produce was being sold in the Haat beyond 3 kms and even today the pattern remains unchanged (Table 4.48).

Table 4.48: Details regarding Marketing of Products (in Percentage)

Details	2-3 Years Before			Present Situation		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Agriculture produce</b>						
Within village	49.5	50	49.55	42.75	50	43.41
Nearest Haat (with in 3 kms)	10	15	11.13	10	0	9.09
Haat Beyond 3 Kms	40.50	35	39.32	47.75	50	47.95
<b>Animal Husbandry Product</b>						
Within village	76.92	50	66.67	61.54	100	66.67
Nearest Haat (with in 3 kms)	15.38	50	26.66	38.46	0	33.33
Haat Beyond 3 Kms	7.69	0	6.67	0	0	0
<b>Other Products</b>						
Within village	0	0	0	0	0	0
Nearest Haat (with in 3 kms)	0	0	0	0	0	0
Haat Beyond 3 Kms	0	100	100	0	100	100

(vi) **Ownership of Assets among Households**

The overall average household income is around Rs.3000 per month and with people in this income bracket one does not expect them to be in possession of too many assets. However, some assets become essential such as agricultural implements, means of transport and some household durables such as radio set and mobile or telephone connections. Table 4.49 clearly brings out the fact that asset among households are barely minimum and at the same time not much change can be seen taking place over the years.

Table 4.49: Details about Assets (Average Number)

Details	2-3 Years Earlier			Present Situation		
	Cultivating HH	Non Cultivating HH	Total	Cultivating HH	Non Cultivating HH	Total
<b>Agr Implements</b>						
Plough	1.27	1.00	1.24	1.40	0.50	1.29
Bullock Cart	1.00	0.00	1.00	0.17	0.00	0.17
Tractor	1.00	0.00	1.00	1.00	0.00	1.00
Chaff Cutter	1.00	1.00	1.00	1.00	0.78	0.95
Others	1.07	1.00	1.06	1.11	1.00	1.10
<b>Transportation</b>						
Cycle	1.23	1.10	1.18	1.50	1.10	1.37
Motor Cycles	0.83	1.00	0.87	0.92	1.00	0.93
Dunlop Jeep	0.00	0.00	0.00	0.00	1.00	1.00
Others	0.00	1.00	1.00	0.00	0.50	0.50

Table 4.49 (contd....)

<b>Non Agr Implements</b>						
Flour/Rice/Dal Mill	0.00	1.00	1.00	0.00	1.00	1.00
<b>HH Assets</b>						
Radio	0.93	0.90	0.92	0.93	0.90	0.92
Television	0.67	0.75	0.69	0.95	1.00	0.97
Telephone	0.50	1.00	0.75	1.00	1.00	1.00
Mobile	0.52	0.17	0.42	1.10	1.00	1.07
Total	0.94	0.84	0.92	1.11	0.96	1.07

**(vii) Emergence of New Activities**

It appears that people in these villages are not very enterprising as is evident from the fact that in the last 2-3 years only two out of our 60 households have taken up any new commercial activity. Two factors could be responsible for lack of commercial activities being initiated. First of all the villages are backward and so do not offer too much scope for starting new ventures. This becomes constrained by the fact that mobility is reduced in the absence of an all-weather road. Moreover, the household incomes too are low and does not allow people the opportunity to invest in a new venture (Table 4.50).

Table 4.50: Emergence of New Commercial Activities over Last 2-3 Years

Details	Cultivating Households	Non Cultivating Households	Total
Yes	0	2	2
	(0.00)	(10.00)	(3.33)
No	40	18	58
	(100.00)	(90.00)	(96.67)
Total	40	20	60
	(100.00)	(100.00)	(100.00)
<b>If Yes, Than of What Type</b>			
Shop	0	1	1
	(0.00)	(50.00)	(50.00)
Transport	0	1	1
	(00.00)	(50.00)	(50.00)
Total	0	2	2
	(00.00)	(100.00)	(100.00)

**(viii) Time Taken in Reaching the Nearby Markets and Frequency of Traveling**

Table 4.51 indicates the time taken by villagers to reach the nearby markets either for the purchase of various inputs or household requirements or for selling their produce. It is, of course, quite obvious that traveling would have been relatively faster and much more convenient if only the all-weather road had been constructed in these villages. However, despite the fact that the all weather road is not available the villages still have to move out for various reasons and this is indicated in Table 4.52. The fact that traveling is troublesome is reflected in the fact that the frequency of travel is quite low among the villagers. On an average around 3

visits are made per month to markets above 5 kms while the frequency is marginally better in case of markets close by (Table 4.53).

Table 4.51: Time in Transportation (in Minutes)

Mode of Transport	Present Situation
Cycle	45
Bullock cart	60
Tempo	30
Tractor trolley	40
Others	40

Table 4.52: Main Purpose for Going Out of village

Details	Cultivating Households	Non Cultivating Households	Total
Sale/Business	40	20	60
	(100.00)	(100.00)	(100.00)
Purchasing	39	20	59
	(97.50)	(100.00)	(98.33)
Education Purpose	40	20	60
	(100.00)	(100.00)	(100.00)
Health Facility	40	18	58
	(100.00)	(90.00)	(96.67)
Social Visits	39	13	52
	(97.50)	(65.00)	(86.67)
Entertainment	17	5	22
	(42.50)	(25.00)	(36.67)
Others	3	1	4
	(7.50)	(5.00)	(6.67)
Total Households	40	20	60

Table 4.53: Average Frequency of Traveling

Details	Cultivating Households	Non Cultivating Households	Total
within 5km	3.72	3.65	3.67
5-10 km	2.72	3.55	3.03
Above 10	3.13	2.75	3.00

(ix) **Problems Arising in the Absence of an All-Weather Road**

All the respondents from the control villages, without any exception, have expressed the opinion that they attach high significance to an all-weather road. In fact nearly 87 per cent feel that it is very important that the village should have proper road connectivity to facilitate their work (Table 4.54).

Table 4.54: Details about the Importance of All Weather Road

Details	Cultivating Households	Non Cultivating Households	Total
Very Important	37	15	52
	(92.50)	(75.00)	(86.67)
Important	3	5	8
	(7.50)	(25.00)	(13.33)
Total	40	20	60
	(100.00)	(100.00)	(100.00)

The difficulties cited by them which could be overcome if an all-weather road was constructed in the village can be categorized into three broad groups. First of all an all-weather road would make it convenient for students of the village in attending schools located outside the village (Table 4.55).

Table 4.55: Problem of Educational Facility due to Non Availability of All Weather Road

Details	Cultivating Households	Non Cultivating Households	Total
Yes	38	19	57
	(95.00)	(95.00)	(95.00)
No	2	1	3
	(5.00)	(5.00)	(5.00)
Total	40	20	60
	(100.00)	(100.00)	(100.00)
<b>If Yes Than of what type</b>			
Problems in going to School	31	13	44
	(31.63)	(39.39)	(33.59)
Problems of teacher' regularity	19	5	24
	(19.39)	(15.15)	(18.32)
Availing higher education difficult	32	14	46
	(32.65)	(42.42)	(35.11)
Aganwadi centre could have opened	13	1	14
	(13.27)	(3.03)	(10.69)
Others	3	0	3
	(3.06)	(0.00)	(2.29)
Total	98	33	131
	(100.00)	(100.00)	(100.00)

Similarly the entire village population would benefit while moving out for getting treatment in the PHC or any other hospital/dispensary (Table 4.56).

Table 4.56: Problem of Health Facility due to Non Availability of All Weather Road

Details	Cultivating Households	Non Cultivating Households	Total
Yes	40	20	60
	(100.00)	(100.00)	(100.00)
Total	40	20	60
	(100.00)	(100.00)	(100.00)
If yes, than of what type			
Medical Facilities are not available within village	7	6	13
	(17.50)	(30.00)	(21.67)
Asha/ANM do not come regularly	27	11	38
	(67.50)	(55.00)	(63.33)
Reaching PHC	37	16	53
	(92.50)	(80.00)	(88.33)
Contacting private doctor	37	16	53
	(92.50)	(80.00)	(88.33)
Expense in cost of medicine	23	11	34
	(57.50)	(55.00)	(56.67)
Total Households	40	20	60

The second area where an impact of the road is bound to be felt is the marketing of their produce both from agriculture and animal husbandry or from other sectors. Once their frequency to visit markets relatively far from the village increases, the opportunity to earn better price for their produce will arise leading to increased income of the households and in the overall living conditions. Finally the amount currently being spent on repair and maintenance of vehicles and on fuel will also be reduced (Table 4.57). On the whole, therefore, an all-weather road is bound to improve the condition of the villages as well as its population.

Table 4.57: Details of Difficulties due to Non Availability of Road

Details	Cult HH	Non Cult HH	Total
Health Facility	26	13	39
	(65.00)	(65.00)	(65.00)
Education Facility	16	18	34
	(40.00)	(90.00)	(56.67)
Traveling	11	2	13
	(27.50)	(10.00)	(21.67)
Marketing	30	5	35
	(75.00)	(25.00)	(58.33)
Maintenance of Vehicles	26	15	41
	(65.00)	(75.00)	(68.33)
Not Getting Value of Ag Produce	4	1	5
	(10.00)	(5.00)	(8.33)
Others	10	1	11
	(25.00)	(5.00)	(18.33)
Total Households	40	20	60

#### D. MAIN POINTS ARISING OUT OF THE ANALYSIS

We have analyzed the data which was obtained from the household survey conducted in our selected villages where roads have been constructed under PMGSY and the control villages which presently do not have an all-weather road.

These villages were selected so that we could have some old roads constructed as early as 2002-03 and some which are relatively new and constructed only a couple of years earlier. Even if we think of 2002-03 only around 5 years have lapsed since these villages were properly connected with a regular all-weather road. So it is as yet rather early to expect large scale changes in the villages leading to improvement in the villages in general and in the living conditions of the people in particular. However, our analysis of these villages at times prior to road availability and the present situation provide us with sufficient evidence to conclude that the roads have had an all round positive impact which may be seen in various respects. Moreover, the conditions of the villages which do not have a road also lend support to the view that an all-weather road certainly contributes towards the betterment of conditions in villages and among the community.

Gorakhpur is an area where our villages are highly dependent on agriculture and allied activities. The road might not have brought about a change in the cropping pattern whereby cultivators have switched over to cash crops. In fact wheat and paddy continue to remain the most important crops. But the advantage has been that improved mobility has enabled the cultivators to increase the inputs in production by way of greater use of fertilizers etc. and this has resulted in improved yield rates of some crops even though the improvement is not very dramatic. Moreover, the roads have facilitated the movement of agricultural surplus to Haats beyond the village market thereby enabling farmers get better return for their produce. A similar impact is observed even in sale of other commodities such as milk products, manufactured goods, etc.

As a result of the road the villagers who went out seeking employment as wage earners are also finding it more convenient and so the average days of employment have increased over the years. The impact on sale of products as well as more days of wage employment generated have resulted in a rise of average household income if we compare the period before road construction and the present situation. In fact average household income taking all the households together have rises by around 35 per cent in a matter of a few years. However, one

has to also account for the fact that there has also been some price escalation which too has resulted in increased incomes.

The roads have provided the incentive to people to purchase their own vehicles. Consequently over the years the number of cycles, scooters and motor cycles owned by the households have registered an increase. Even in the case of cars and jeeps and tractors some slight increase is visible. Previously it was very troublesome riding a cycle or a two-wheeler on a kutchra road or a kharanja. It not only was difficult and time consuming but a lot of additional money was spent on repair and maintenance of the vehicle. Even the fuel efficiency of vehicles was adversely affected. But now an improvement is seen in all these aspects and are being accepted by the respondents. It of course follows that increased number of vehicles and better quality of road has resulted in a considerable spurt in the flow of traffic as well and the frequency of visits of individuals for various purposes has gone up over the years.

These are impacts which could actually be measured in terms of higher income, more person days of employment and increase in number of privately owned vehicles. But the advantages go beyond this point. To a certain extent they are equally if not more important than the benefits already indicated above as they are positively affecting the very quality of life. In the case of education it is so much more convenient for students who attend school outside the village. Going to school particularly during monsoons was a big headache so long as the village had a kutchra road. The all-weather road has put an end to this inconvenience and this has had a positive impact on school attendance. In fact the road has enabled the some schools to send their school bus in case a sufficient number of students are from that village.

Equally important has been the impact which is felt in availment of medical facilities. In the course of the field survey and discussions with other individuals the people recalled with great pain the problems which were faced by them whenever a family member needed medical attention. These are small villages and even a PHC is located at some distance. The same is true in the case of a private doctor. The kutchra road or kharanja used to be so uneven that taking a serious case to the hospital was particularly very troublesome. The all-weather road has brought a much needed relief in their lives. It is much less troublesome and time consuming to shift a patient from the village to the nearest health centre. In fact it has also helped in reducing the overall cost involved during an illness to some extent.

However, even the road has not made a significant improvement in the commercial activities taking place in these villages. The explanation could lie in terms of the relatively low household incomes which act as a constraint on peoples investment capacity. Low income levels could also mean not sufficient scope for starting additional commercial activities. And

finally even the lack of enterprise among villagers may be the impediment inhibiting increased commercial activities. But a very modest beginning has been made in terms of emergence of some new shops and repair shops etc. And this could ultimately pave the way for more development in the near future.

Our respondents are very aware of the advantages which have been provided by the all-weather road and have indicated the areas in which the village as a whole and they in particular have been its beneficiaries.

The advantages being enjoyed by our selected villages stand out further when we compare them with the control villages. Reduced mobility is affecting their capacity to earn and the average household income of these villages is much lower when compared to those who have a road. The children of these villages are still grappling with the problem of traveling through water-logged roads during monsoons to attend school. Going to school further away becomes even more difficult and so some discontinue their education on this ground. The problem is faced more by the girls. Similarly, the absence of a proper road is being felt by all with respect to getting medical treatment. It is not that the sick are not going to the doctor but they certainly lament the fact that a road would have made things much more easy. They are, therefore, strongly in favour of an all-weather road being sanctioned for their villages at the earliest so that their conditions may come at par with the villages that already enjoy this advantage.

While the household survey was conducted among the selected households we even held discussions with few influential persons in our villages to obtain their views about the PMGSY scheme, its impact on the villages and some areas where the scheme is in need of some improvement. A similar opinion had also been taken from our respondents.

As far as the roads constructed in Gorakhpur is concerned, the general impression of people is that good quality roads have been constructed in the district under the PMGSY scheme. The norms had been adhered to by the contractors and also that the connectivity provided is the best. Not only was the quality of construction good at the time of construction but even at present the condition of all roads except for two is quite satisfactory. However, as was found in the other districts repair and maintenance on a regular basis is not being undertaken even in Gorakhpur. The problem of not having sufficient category A contractors seems to be felt in all districts. The norms laid down are fairly strict and given the fact that under PMGSY a number of roads are sanctioned simultaneously adds to this problem since the same contractor might get the contract to construct more than one road. They ensure that their machinery and equipment is as per norms upto the point of road construction even if it means

taking some on loan from other sources. However, they become reluctant afterwards when time for routine and maintenance comes. This is so either because they are then busy executing a new contract somewhere else or because it is generally felt that the amounts which have been allotted for this item of expenditure is insufficient. The authorities, therefore, need to look into this significant aspect and come up with suitable changes in the existing provisions to ensure regular and timely repair and maintenance. It must be kept in mind that routine repairs would ensure that no major damage would be caused to roads which could have happen if routine repairs were not undertaken.

## Annexure 4.1: Distance Covered for Availing Different Facilities

## (a) Gadaina

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles
Bus station	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Primary	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
Upper Primary School	3-5 Kms	√	--	Kuttchi	Within Village	√	--
High School/Inter College	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
Health Sub Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
PHC	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
CHC	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Family Planning Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Market	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
Cooperative Seed Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
Cooperative Societies	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
Bank Branch	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Post Office	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Artificial	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
PDS Shop	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√

## (b) Bheusa

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles
Bus station	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Primary	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
Upper Primary School	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	√	--
High School/Inter College	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Health Sub Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Aganwadi Centre	1 to 3 kms	√	--	Kuttchi	Within Village	√	--
Private Clinic	Above 5kms	--	√	Kuttchi	Less than 1 Kms	--	√
Market	Above 5kms	--	√	Kuttchi	Less than 1 Kms	--	√
Cooperative Seed Centre	1 to 3 kms	--	√	Kuttchi	1 to 3 kms	--	√
Cooperative Societies	3-5 Kms	--	√	Kuttchi	3-5 Kms	--	√
Bank Branch	Less than 1 Kms	--	√	Kuttchi	Less than 1 Kms	--	√
Post Office	Within Village	√	--	Kuttchi	Within Village	√	--
Artificial	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

## (c) Chalbella

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles
Bus station	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	1 to 3 kms	√	--	Mixed	1 to 3 kms	√	--
High School/Inter College	Above 5kms	√	--	Kuttchi	Above 5kms	√	--
Health Sub Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Cooperative Societies	Above 5kms	--	√	Mixed	Above 5kms	--	√
Bank Branch	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Post Office	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Artificial	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## (d) Bhaksa

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles
Bus station	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	Above 5kms	√	--	Kuttchi	Above 5kms	√	--
Health Sub Centre	Within Village	√	--	Kuttchi	Within Village	√	--
PHC	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Within Village	√	--	Kuttchi	Within Village	√	--
Market	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
Cooperative Societies	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Bank Branch	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Post Office	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
Artificial	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

## (e) Sihorwa

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles
Bus station	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Less than 1 Kms	--	√	Kharanja	Less than 1 Kms	√	--
High School/Inter College	Less than 1 Kms	--	√	Kharanja	Less than 1 Kms	--	√
Health Sub Centre	Above 5kms	--	√	Kharanja	Above 5kms	--	√
PHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Aganwadi Centre	Within Village	--	√	Kuttchi	Within Village	--	√
Private Clinic	Above 5kms	--	√	Kuttchi	Within Village	√	--
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	1 to 3 kms	--	√	Kuttchi	Above 5kms	√	--
Cooperative Societies	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Bank Branch	Above 5kms	--	√	Kharanja	Above 5kms	√	--
Post Office	Within Village	√	--	Mixed	Above 5kms	√	--
Artificial	Above 5kms	--	√	Mixed	1 to 3 kms	√	--
PDS Shop	Less than 1 Kms	√	--	Mixed	1 to 3 kms	√	--

## (f) Lonla

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/ Cycle & automated Vehicles
Bus station	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Primary	Within Village	--	√	Kuttchi	Within Village	--	√
Upper Primary School	Within Village	--	√	Kuttchi	Within Village	--	√
High School/Inter College	Less than 1 Kms	--	√	Kuttchi	Less than 1 Kms	--	√
Health Sub Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	--	√	Kuttchi	Within Village	--	√
Private Clinic	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Societies	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Bank Branch	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Post Office	1 to 3 kms	--	√	Kuttchi	1 to 3 kms	--	√
Artificial	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PDS Shop	1 to 3 kms	--	√	Kuttchi	1 to 3 kms	--	√

## (g) Purnaha

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	--	√	Kuttchi	Within Village	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	1 to 3 kms	√	--	Mixed	1 to 3 kms	√	--
High School/Inter College	Above 5kms	√	--	Mixed	Above 5kms	√	--
Health Sub Centre	Above 5kms	√	--	Mixed	Above 5kms	--	√
PHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
CHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Mixed	Within Village	√	--
Private Clinic	Above 5kms	--	√	Mixed	Above 5kms	--	√
Market	Above 5kms	--	√	Mixed	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Cooperative Societies	Above 5kms	--	√	Mixed	Above 5kms	--	√
Bank Branch	Above 5kms	--	√	Mixed	Above 5kms	--	√
Post Office	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Artificial	Above 5kms	--	√	Mixed	Above 5kms	--	√
PDS Shop	Within Village	√	--	Mixed	1 to 3 kms	--	√

## (h) Silhata Mundera

Facility	Before PMGSY				After PMGSY		
	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	3-5 Kms	√	--	Mixed	3-5 Kms	√	--
High School/Inter College	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Health Sub Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	1 to 3 kms	--	√	Kuttchi	1 to 3 kms	--	√
Cooperative Societies	1 to 3 kms	--	√	Kuttchi	1 to 3 kms	--	√
Bank Branch	1 to 3 kms	--	√	Kuttchi	1 to 3 kms	--	√
Post Office	1 to 3 kms	--	√	Kuttchi	1 to 3 kms	--	√
Artificial	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

## Annexure 4.2: Distance Covered for Availing Different Facilities

## (a) Simra

Facility	2-3 Years Earlier				Present Situation		
	Distance	Walking/Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	--	√	Mixed	Above 5kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Less than 1 Kms	--	√	Kuttchi	Within Village	√	--
High School/Inter College	Above 5kms	--	√	Mixed	Above 5kms	--	√
Health Sub Centre	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
PHC	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
CHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
Market	Above 5kms	--	√	Mixed	3-5 Kms	--	√
Cooperative Seed Centre	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
Cooperative Societies	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
Bank Branch	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
Post Office	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Artificial Insemination Centre	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

## (b) Shivala Tola

Facility	2-3 Years Earlier				Present Situation		
	Distance	Walking/Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/Cycle	Walking/Cycle & automated Vehicles
Bus station	1 to 3 kms	√	--	Kharanja	1 to 3 kms	√	--
Primary	Less than 1 Kms	√	--	Kharanja	Less than 1 Kms	√	--
Upper Primary School	Less than 1 Kms	√	--	Kharanja	Less than 1 Kms	√	--
High School/Inter College	3-5 Kms	√	--	Kharanja	3-5 Kms	√	--
Health Sub Centre	Less than 1 Kms	√	--	Kharanja	Less than 1 Kms	√	--
PHC	Above 5kms	√	--	Kharanja	Less than 1 Kms	√	--
CHC	Above 5kms	√	--	Kharanja	Above 5kms	√	--
Family Planning Centre	Above 5kms	√	--	Kharanja	Above 5kms	√	--
Aganwadi Centre	Less than 1 Kms	√	--	Kharanja	Less than 1 Kms	√	--
Private Clinic	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Market	Above 5kms	√	--	Mixed	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	√	--	Kharanja	Above 5kms	√	--
Cooperative Societies	Above 5kms	√	--	Kharanja	Above 5kms	√	--
Bank Branch	3-5 Kms	√	--	Kharanja	3-5 Kms	√	--
Post Office	Less than 1 Kms	√	--	Kharanja	Less than 1 Kms	√	--
Artificial Insemination Centre	Above 5kms	√	--	Mixed	Above 5kms	√	--
PDS Shop	Less than 1 Kms	√	--	Kharanja	Less than 1 Kms	√	--

Annexure 4.3: Income from Milk and Milk Products

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average per Household</b>						
Total Production (Litres)	988	709	891	939	674	847
Value of total product (Rs)	10290	7632	9371	14029	9323	12402
Total Sale (Litres)	314	323	317	360	338	352
Total Value of Sale (Rupees)	3404	4203	3680	5941	4550	5460

Annexure 4.4: Income From Other Sale of Animal Husbandry (Rs)

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average per Household</b>						
Sale of Animal	1631	1664	1643	721	654	698
Sale of Other Products	0	0	0	0	0	0
<b>Total</b>	<b>1631</b>	<b>1664</b>	<b>1643</b>	<b>721</b>	<b>654</b>	<b>698</b>

Annexure 4.5: Income from Other Economic Activities

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average Per HH</b>						
Manufacturing	61	1842	677	78	3111	1127
Shop/Business	264	1491	688	490	3597	1565
Self Employment	22	5273	1838	38	8520	2971
Job	5532	1210	4037	5149	1513	3892
Others	129	0	84	215	0	141
<b>Total</b>	<b>6008</b>	<b>9817</b>	<b>7325</b>	<b>5971</b>	<b>16742</b>	<b>9696</b>

Annexure 4.6: Average Income from Other sources

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average Per HH</b>						
Interest	121	0	79	178	301	221
Money Order	1638	1837	1707	2961	2716	2876
Pension	241	169	216	583	420	527
Others	1443	320	1055	2166	743	1674
<b>Total</b>	<b>3443</b>	<b>2327</b>	<b>3057</b>	<b>5889</b>	<b>4181</b>	<b>5298</b>

Annexure 4.7 : Income from Milk and Milk Products

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average per Household</b>						
Total Production (Litres)	886	459	743	561	419	514
Value of total product (Rs)	9800	4870	8157	8554	6103	7737
Total Sale (Litres)	317	118	250	255	150	220
Total Value of Sale (Rupees)	3744	693	2727	3991	2310	3430

Annexure 4.8 : Income from other sale of Animal Husbandry (Rs)

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per Household</b>						
Sale of Animal	1,675	850	1,400	405	600	70
Sale of Other Products	-	-	-	-	-	-
<b>Total</b>	<b>1,675</b>	<b>850</b>	<b>1,400</b>	<b>405</b>	<b>600</b>	<b>70</b>

Annexure 4.9 : Income from Other Economic Activities

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per HH</b>						
Manufacturing	-	1,225	408	-	1,311	437
Business	-	3,345	1,115	-	4,495	1,498
Self Employment	-	10,553	3,518	-	15,912	5,304
Job	2,675	4,340	3,230	3,625	2,150	3,133
Others	1,125	563	938	1,875	900	1,550
<b>Total</b>	<b>3,800</b>	<b>20,026</b>	<b>9,209</b>	<b>5,500</b>	<b>24,769</b>	<b>11,923</b>

Annexure 4.10: Average Income from Other Sources (Rs)

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per HH</b>						
Money Order	963	1500	1142	1325	2600	1750
Pension	660	0	440	780	0	520
<b>Total</b>	<b>1623</b>	<b>1500</b>	<b>1582</b>	<b>2105</b>	<b>2600</b>	<b>2270</b>

## CHAPTER V

### IMPACT OF PMGSY IN MEERUT DISTRICT

#### A. GENERAL INFORMATION ABOUT THE VILLAGES

Meerut, as we are aware, falls in the Western region of the State and is among the better developed districts. The region enjoys the advantage of being the most developed region whether we look at agriculture, industry or the tertiary sector. The proximity of the district to Delhi gives it an added advantage.

The eight villages selected by us from among those which had roads constructed under PMGSY were from five different blocks of the district. The length of roads ranged from 2 kilometres to almost 5 kilometres. And both of these roads were in Sarghana block. The years of construction were between early 2003 and late 2005. The cost of roads varied depending on the type of soil in the village and this is reflected in the fact that the road of Rohta block cost Rs.55.22 lakh although it was 2.5 kms in length while a 3.2 kms road of Sarghana block cost Rs.54.30 lakh. The quality of roads constructed in the district is good all over our selected districts and fortunately even their present condition is good except for one road and this again is a reflection of the quality of roads which have been constructed in Meerut (Table 5.1).

**Table 5.1: Sample Villages of Meerut (Details of PMGSY Roads)  
PMGSY under R.E.S.**

Village	Block	Length of Road (Kms)	Cost of Construction (Rs. Lakhs)	Year of Initiation	Year of Completion	Quality of Road (Giri Institute Observation)
Bhola	Rohta	2.50	55.22	15.03.02	30.04.03	Good construction. Good condition.
Bhamauri	Sarghana	3.20	54.30	07.03.02	20.06.03	Very good construction. Very good condition.
Manpuri	Sarghana	2.00	32.54	07.03.04	30.11.04	Good Quality. Good condition
Meerpur	Jani Khurd	3.00	43.83	29.08.04	29.05.05	Good Quality. Good condition
Raiighara	Machara	3.00	43.34	01.01.04	30.06.05	Good Quality. Good condition
Nagala Kaboolpur	Kharkhanda	3.10	40.31	06.08.04	05.05.05	Good Quality. Good condition
Alamgiripur	Sarghana	4.975	64.06	20.10.04	10.07.05	Very good Quality. Very good condition
Bahrampur Morana	Jani Khurd	4.56	74.70	05.02.05	10.12.05	Good quality. Condition not satisfactory

Note: Road maintenance is being done regularly only in Meerpur.

Control Villages: (i) Fitkari (Mawana Block) – Road connectivity required is around 2.35 kms. Road is proposed under PMGSY.

(ii) Chindauri Tappa (Daurala Block) – Road connectivity required is around 3.00 kms. Road is proposed under PMGSY.

The control villages which we selected are Fitkari in Mawana block and although it does not have an all-weather road is a prosperous village. The other village is Chindauri Tappa from Daurala block and this too is a prosperous village. In both cases road construction under

PMGSY is proposed and the length of roads is 2.35 and 3.00 kms in Fitkari and Chindauri Tappa respectively (Table 5.1).

(i) **Brief Profile of Selected Villages**

Some important information about our selected villages is being provided in Table 5.2. Two of our villages were very large having population of above 8000. In fact there was only one village with population below 2000. The average size of the household varied from around 5.5 in two villages to around 8.0 per household in another two. Literacy levels were high among the males in all villages except for one where it was below 50 per cent. Among females it was lower at around 40-45 per cent except two villages. Meerpur was the village with very high literacy among both sexes (Table 5.2).

**Table 5.2: Details about Village/Habitation**

	Bhola	Bhamauri	Alamgiripur	Meerpur	Brahmpur Morana	Manpuri	Nagala Kaboolpur	Raidara
Total Households	780	1565	450	529	329	1362	450	315
Total Population	4790	10925	3650	3000	1797	8172	3250	2520
Male	2590	5962	1916	1550	920	4286	1685	1370
Female	2200	4963	1734	1450	877	3886	1565	1150
Literacy (%)								
Male	55.98	65.00	65.00	90.00	52.93	49.00	54.96	60.22
Female	40.45	42.00	45.00	76.97	39.00	35.00	42.56	45.22
Avg HH Size	6.14	6.98	8.11	5.67	5.46	6.00	7.22	8.00

If we look at the net sown and net irrigated area of these villages it is seen that a high percentage of the area is under cultivation and the entire area cultivated is also irrigated. The main source of irrigation being private Tubewells while some villages have government Tubewells as well. In five out of our eight selected villages some canals are also found which also assist in irrigation (Table 5.3).

**Table 5.3: Details of Cultivated Land**

	Bhola	Bhamauri	Alamgiripur	Meerpur	Brahmpur Morana	Manpuri	Nagala Kaboolpur	Raidara
Total Area (acre)	750	12500	1097	360	1022	1670	825	312
Net Sown Area (acres)	650 (86.67)	9200 (73.60)	1057 (96.35)	260 (72.22)	1002 (98.04)	1550 (92.81)	800 (96.97)	285 (91.35)
Net Irrigated Area (Acres)	650 (100.00)	9200 (100.00)	1057 (100.00)	260 (100.00)	983 (98.10)	1550 (100.00)	800 (100.00)	285 (100.00)
Source of Irrigation								
Private Tubewells (Nos)	22	250	85	35	36	45	25	100
Govt Tubewells (Nos)	0	2	0	1	2	0	4	0
Canal (kms)	5	2	0	0	1	2	0	2
Others (Wells)	0	0	0	0	0	0	0	0

Since Meerut is prosperous area from the point of view of agriculture as well as animal husbandry it is quite understandable to see that bulk of the workers are occupied in these sectors. They together account for over three-fourth of the total. The next important category is of labourers (Table 5.4).

Table 5.4: Workers and their Classification

	Bhola	Bhamauri	Alamgiripur	Meerpur	Brahmpur Morana	Manpuri	Nagala Kaboolpur	Raidara
Cultivators	70.25	70.09	69.91	72.14	64.85	72.65	72.52	80.65
Labourers	5.88	10.02	11.11	13.53	10.78	3.65	19.08	7.17
Animal Husbandry	13.85	14.08	16.86	9.25	15.60	17.29	7.63	3.58
Mining	0.00	0.00	0.53	0.00	0.00	0.00	0.00	0.00
Small Industry	0.24	0.12	0.21	0.00	0.00	0.20	0.00	0.00
Other Industries	0.00	0.00	0.53	0.00	0.00	0.00	0.00	0.00
Construction	0.34	5.01	0.00	0.90	1.13	0.24	0.00	2.15
Business	1.22	0.20	0.11	1.08	3.39	3.24	0.00	4.30
Transport and Communication	0.20	0.48	0.32	1.08	0.56	0.24	0.76	1.08
Others	8.22	0.00	0.42	2.02	3.69	2.46	0.00	1.08
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

The changes which can be observed as a result of the road in terms of additional education and health facilities or bank branch and a bus station, are only limited to the extent that Bhamauri and Alamgiripur now have a primary school while a doctor has opened his private clinic in Bhola and Bhamauri. Besides this Nagala Kaboolpur now has an Aanganwadi centre. The other villages already had a primary school and Aanganwadi centre (Table 5.5).

Table 5.5: New Schools, Clinics, Bank Branch, etc. after Road Construction

	Bhola	Bhamauri	Alamgiripur	Meerpur	Brahmpur Morana	Manpuri	Nagala Kaboolpur	Raidara
Primary Schools	--	√	√	--	--	--	--	--
Upper Primary School	--	--	--	--	--	--	--	--
PHC	--	--	--	--	--	--	--	--
Private Clinic	√	√	--	--	--	--	--	--
Bank Branch	--	--	--	--	--	--	--	--
Bus Station	--	--	--	--	--	--	--	--
Aganwadi Centre	--	--	--	--	--	--	√	--

The facility of having an all-weather road has been that some new commercial activity has been started in the past few years. Even in those activities which already existed there has been an addition. This change can be observed in all our villages but variation between them can be seen if we look at Table 5.6. This gives an indication of the benefits which have been reaped by people. The additional commercial activities are scooter/motor cycle repair shops, TV repair shops and Tailoring shops (for details please see Table 5.6).

Table 5.6: Details of Commercial Activities

	Before PMGSY							
	Bhola	Bhamauri	Alamgiripur	Meerpur	Brahmpur Morana	Manpuri	Nagala Kaboolpur	Raidara
Tea Shop	11	0	0	0	0	6	0	0
Sweet Shop	2	0	0	0	0	2	0	0
General Shop	19	8	7	3	18	8	6	7
Cycle Repair Shop	2	1	0	0	1	2	0	0
Scooter/Motor Cycle Repair Shop	1	0	0	0	1	1	0	0
Jeep/Car/Tractor repair Shop	0	0	0	0	0	0	0	0
Agricultural Implements Shop	0	0	0	0	0	0	0	0
Fertilizer/Seed Shop	0	1	0	0	0	0	0	0
Electronic Shop	1	2	0	0	1	1	0	0
TV/Radio Repair Shop	0	3	0	0	0	1	0	0
Tailor	8	2	2	0	2	7	0	4
Others	3	16	6	6	1	2	0	0
After PMGSY								
Tea Shop	15	0	0	0	0	10	0	0
Sweet Shop	3	0	0	0	0	3	0	0
General Shop	21	12	9	11	20	14	10	10
Cycle Repair Shop	3	2	0	2	2	4	0	0
Scooter/Motor Cycle Repair Shop	1	0	0	2	1	1	0	0
Jeep/Car/Tractor repair Shop	2	0	0	2	0	1	0	0
Agricultural Implements Shop	0	0	0	0	0	0	0	0
Fertilizer/Seed Shop	0	1	0	0	0	0	0	0
Electronic Shop	2	5	0	0	2	2	0	0
TV/Radio Repair Shop	0	6	0	1	0	2	0	0
Tailor	10	2	2	2	4	9	1	6
Others	3	13	9	17	4	3	2	0
Change								
Tea Shop	4	0	0	0	0	4	0	0
Sweet Shop	1	0	0	0	0	1	0	0
General Shop	2	4	2	8	2	6	4	3
Cycle Repair Shop	1	1	0	2	1	2	0	0
Scooter/Motor Cycle Repair Shop	0	0	0	2	0	0	0	0
Jeep/Car/Tractor repair Shop	2	0	0	2	0	1	0	0
Agricultural Implements Shop	0	0	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	0	0	0	0	0	0
Electronic Shop	1	3	0	0	1	1	0	0
TV/Radio Repair Shop	0	3	0	1	0	1	0	0
Tailor	2	0	0	2	2	2	1	2
Others	0	-3	3	11	3	1	2	0

The availability of an all-weather road has had a direct impact on the ownership of private vehicles whether it is cycles, scooters/motor cycles, jeeps/cars, tractors, etc. A substantial increase is observed in ownership of cycles as well as scooters/motor cycles in all selected villages. Cars/jeeps and tractors are expensive vehicles. However, even their number has increased marginally in all villages. The other vehicle whose number has increased is the bullock cart which is the cheaper means of transporting goods from one place to the other (for details see Table 5.7). Only Bhola and Alamgiripur were the village which had a bus station. But bus stations have not been sanctioned in any other village as yet.

The average distance which villagers have to cover in order to avail facilities such as education and health, marketing, cooperative societies, bank and post office etc. during the period before PMGSY and present situation for each selected village is being presented in Annexure 5.1.

Table 5.7: Details of Privately Owned Vehicles

Details	Bhola	Bhamaur	Alamgiripur	Meerpur	Brahmpur Morana	Manpuri	Nagala Kaboolpur	Raidara
Cycle	135	500	26	110	180	212	60	100
Motor Cycle/Scooter	116	350	22	12	86	18	35	35
Car/Jeep	5	20	1	0	3	3	1	4
Tractor	12	45	13	3	21	11	8	6
Bus/Truck/Matador	0	4	0	0	0	0	0	0
Bullock Cart/Dunlop Cart	125	475	180	180	232	220	0	50
Tonga	0	7	1	1	0	0	4	0
Rickshaw Trolley	8	0	0	7	0	3	0	0
Jugar	0	3	0	1	0	0	0	0
<b>After PMGSY</b>								
Cycle	156	700	30	190	260	235	125	125
Motor Cycle/Scooter	132	400	25	94	125	37	50	50
Car/Jeep	7	45	1	5	5	5	2	5
Tractor	14	65	15	20	23	12	12	10
Bus/Truck/Matador	2	5	0	0	0	0	0	0
Bullock Cart/Dunlop Cart	135	660	200	290	250	227	0	60
Tonga	0	7	1	2	0	0	4	0
Rickshaw Trolley	10	0	0	0	0	7	0	0
Jugar	0	9	0	10	0	0	0	3
N.B. Only Nagala Kaboolpur has 2 Tempos and they were found even before road was constructed								
<b>Change</b>								
Cycle	21	200	4	80	80	23	65	25
Motor Cycle/Scooter	16	50	3	82	39	19	15	15
Car/Jeep	2	25	0	5	2	2	1	1
Tractor	2	20	2	17	2	1	4	4
Bus/Truck/Matador	2	1	0	0	0	0	0	0
Bullock Cart/Dunlop Cart	10	185	20	110	18	7	0	10
Tonga	0	0	0	1	0	0	0	0
Rickshaw Trolley	2	0	0	-7	0	4	0	0
Jugar	0	6	0	9	0	0	0	3

## (ii) Brief Profile of the Control Villages

The control villages selected for survey were Fitkari and Chindauri Tappa. The former has a population of around 4000 while that of the latter is 5000. Literacy rates among females are almost identical in both villages but in the case of male literacy Fitkari is slightly better off (Table 5.8).

Table 5.8: Details about the Control Villages

Details	Fitkari	Chindauri Tappa
Block	Mawana	Daurala
Village/Habitation	Fitkari	Chindauri Tappa
Details about Village/Habitation	Fitkari	Chindauri Tappa
Total Households	636	800
Total Population	3949	5000
Male	2030	2585
Female	1917	2415
<b>Literacy (%)</b>		
Male	60.00	55.98
Female	45.91	45.96
Average Size of Households	6.21	6.25

Agriculture being the mainstay of the people is the reason why such a high area is being cultivated. Meerut being agriculturally prosperous is the reason why even in our control villages 100 per cent land which is under cultivation is irrigated (Table 5.9). Private Tubewells are the single most important source of irrigation in our control villages

Table 5.9: Details of Cultivated Land

Details	Fitkari	Chindauri Tappa
Total Area (acre)	537	1240
Net Sown Area (acres)	439	1200
	(81.75)	(96.77)
Net Irrigated Area (Acres)	439	1200
	(100.00)	(100.00)
Source of Irrigation		
Private Tubewells (Nos)	60	80
Govt Tubewells (Nos)	1	0
Canal (kms)	1	1
Others	0	0

The dominance of agriculture and allied activities is fully reflected in the distribution of workers in different categories (for details see Table 5.10).

Table 5.10: Workers and their Classification (% Distribution)

Details	Present Situation	
	Fitkari	Chindauri Tappa
Cultivator	69.03	70.00
Labourers	11.04	14.72
Animal Husbandry	10.45	8.98
Mining	--	--
Small Industry	3.45	1.80
Other Industries	--	--
Construction	2.46	1.62
Business	1.78	1.26
Transport and Communication	0.79	0.63
Others	1.00	0.99
Total	100.00	100.00

No new facilities by way of upper primary school, PHC, Private clinic, Bank Branch or Bus Station have been witnessed in the villages over the past few years. Both, however, are lucky to have a primary school which is over 3 years old.

Even in terms of commercial activities there has not been much of a change in the present situation when compared to a few years earlier. In fact none of the enterprises listed in Table 5.11 has started recently. All the activities are those which already existed. The only change which can be witnessed is some slight increase in the already existing ones such as general shops, cycle repair shop, tailors shops, etc. (Table 5.11).

Table 5.11: Details of Commercial Activities

Details	2-3 Years Earlier		Present Situation		Change	
	Fitkari	Chindauri Tappa	Fitkari	Chindauri Tappa	Fitkari	Chindauri Tappa
Tea Shop	3	2	3	2	0	0
Sweet Shop	0	1	0	1	0	0
General Shop	20	7	26	10	6	3
Cycle Repair Shop	3	2	5	2	2	0
Scooter/Motor Cycle Repair Shop	0	0	0	0	0	0
Jeep/Car/Tractor repair Shop	0	0	0	0	0	0
Agricultural Implements Shop	0	0	0	0	0	0
Fertilizer/Seed Shop	0	0	0	0	0	0
Electronic Shop	0	2	0	2	0	0
TV/Radio Repair Shop	5	1	7	2	2	1
Tailor	15	4	20	4	5	0
Industrial enterprises	7	2	7	2	0	0
Others	4	8	9	10	5	2

Although the villages do not have an all-weather road the requirements of people are such that they have to maintain their private vehicles. A vehicle, even when used on a kutchra or semi-pucca road does save time as compared to the time taken in walking. Moreover for transporting goods from the village or to the village requires some vehicle and so it is observed that people are in possession of cycle and scooters/motor cycles, four wheelers, tractors and bullock/Dunlop carts in both our control villages. Over the past few years there has been an increase in the number of privately owned vehicles as can be seen in Table 5.12.

**Table 5.12: Details of Privately Owned Vehicles**

Details	2-3 Years Earlier		Present Situation		Change	
	Fitkari	Chindauri Tappa	Fitkari	Chindauri Tappa	Fitkari	Chindauri Tappa
Cycle	275	440	315	500	40	60
Motor Cycle/Scooter	137	140	158	200	21	60
Car/Jeep	8	11	9	15	1	4
Tractor	30	50	38	70	8	20
Bus/Truck/Matador	0	11	0	13	0	2
Bullock Cart/Dunlop Cart	225	500	245	525	20	25
Tonga	7	1	8	1	1	0
Rickshaw Trolley	0	0	0	0	0	0
Jugar	0	2	1	2	1	0

If we look at the distance which villagers have to cover to avail facilities such as education and health, traveling by bus, visiting the market, bank or post office etc. the distance varies from within the village to above 5 kms. Both villages are fortunate that they had a primary school and Aanganwadi centre within the village even 2-3 years earlier. Fitkari also has a high school within the village while Chindauri Tappa has a post office located in the village itself. Other facilities are either 1-3 or above 5 kms from the village and if we compare the present situation to that over the last 2-3 years there is no change. For details please see Annexure 5.2 at the end of the chapter.

## **B. ANALYSIS OF THE HOUSEHOLD DATA OF OUR SELECTED VILLAGES**

### **(i) General Information**

If we look at the details of our respondents representing cultivating and non-cultivating households our cultivating households mainly belonged to the general caste category and accounted for around 65 per cent of total respondents from this group. In the case of non-cultivating respondents however almost 44.5 per cent belonged to the SC/ST category while another 36 per cent were OBC. General caste therefore was below 20 per cent in the total

sample. The overall average age of all respondents worked out to be around 47 years. The cultivators were more educated as compared to non-cultivators with around 51 per cent having studied at least upto High School/Intermediate level or even more. Among the non-cultivators the primary occupation of around 50 per cent was self-employed (Table 5.13).

Table 5.13: Details About Respondents

	Cultivating Households	Non Cultivating Households	Total
General	104	16	120
	(65.41)	(19.75)	(50.00)
OBC	25	29	54
	(15.72)	(35.80)	(22.50)
SC/ST	30	36	66
	(18.87)	(44.44)	(27.50)
Total	159	81	240
	(100.00)	(100.00)	(100.00)
<b>Average Age</b>	49.09	42.8	46.97
<b>Education Level</b>			
Illiterate	20	15	35
	(12.58)	(18.52)	(14.58)
Literate	11	5	16
	(6.92)	(6.17)	(6.67)
Upper Primary	47	39	86
	(29.56)	(48.15)	(35.83)
HS/Intermediate	67	19	86
	(42.14)	(23.46)	(35.83)
Graduate	14	0	14
	(8.81)	(0.00)	(5.83)
Post Graduate	0	3	3
	(0.00)	(3.70)	(1.25)
<b>Total</b>	159	81	240
	(100.00)	(100.00)	(100.00)
<b>Primary Occupation</b>			
Agriculture/Animal Husbandry	159	0	159
	(100.00)	(0.00)	(66.25)
Small/Big Shop	0	20	20
	(0.00)	(24.69)	(8.33)
Self Employment	0	40	40
	(0.00)	(49.38)	(16.67)
Manufacturing	0	18	18
	(0.00)	(22.22)	(7.50)
Service	0	3	3
	(0.00)	(3.70)	(1.25)
<b>Total</b>	159	81	240
	(100.00)	(100.00)	(100.00)

If we look at the details of these households not much difference is found in male/female percentage among cultivating and non-cultivating households. But age-wise distribution revealed that among cultivating households concentration was highest in the age group of 15-30

years (38.57 per cent) while among non-cultivating households 39 per cent were in the age group of below 15 years. In both cases persons with education upto the upper primary level was found to be highest. Graduates and post-graduates taken together were around 9 per cent and almost a similar percentage had received some technical education. Their working status can be seen in Table 5.14.

Table 5.14: Details About the Households

Details	Cultivating Households	Non Cultivating Households	Total
Male	634	293	927
	(55.32)	(54.77)	(55.15)
Female	512	242	754
	(44.68)	(45.23)	(44.85)
Total	1,146	535	1,681
	(100.00)	(100.00)	(100.00)
<b>Age Group (Yrs)</b>			
0 to 15	344	209	553
	(30.02)	(39.07)	(32.90)
15 to 35	442	190	632
	(38.57)	(35.51)	(37.60)
35 to 60	257	98	355
	(22.43)	(18.32)	(21.12)
Above 60	103	38	141
	(8.99)	(7.10)	(8.39)
Total	1,146	535	1,681
	(100.00)	(100.00)	(100.00)
<b>Educational Level</b>			
Illiterate	139	103	242
	(12.13)	(19.25)	(14.40)
Literate	34	14	48
	(2.97)	(2.62)	(2.86)
Upper Primary	429	246	675
	(37.43)	(45.98)	(40.15)
HS/Intermediate	315	96	411
	(27.49)	(17.94)	(24.45)
Graduate	110	10	120
	(9.60)	(1.87)	(7.14)
Post Graduate	32	4	36
	(2.79)	(0.75)	(2.14)
Others	87	62	149
	(7.59)	(11.59)	(8.86)
Total	1,146	535	1,681
	(100.00)	(100.00)	(100.00)
<b>Working Status</b>			
Child	86	63	149
	(7.50)	(11.78)	(8.86)
Student	408	182	590
	(35.60)	(34.02)	(35.10)
Working	353	182	535
	(30.80)	(34.02)	(31.83)
Unemployed	3	1	4
	(0.26)	(0.19)	(0.24)

Table 5.14 (contd...)

Housewife	264	92	356
	(23.04)	(17.20)	(21.18)
Pensioner	10	6	16
	(0.87)	(1.12)	(0.95)
Old/Handicapped	22	9	31
	(1.92)	(1.68)	(1.84)
Total	1,146	535	1,681
	(100.00)	(100.00)	(100.00)
<b>Main Occupation</b>			
Agriculture/AH	289	35	324
	(81.41)	(18.82)	(59.89)
Agricultural Labour	0	14	14
	(0.00)	(7.53)	(2.59)
Non Agricultural Labour	7	22	29
	(1.97)	(11.83)	(5.36)
Shop/Business	4	29	33
	(1.13)	(15.59)	(6.10)
Manufacturing	1	23	24
	(0.28)	(12.37)	(4.44)
Job	49	17	66
	(13.80)	(9.14)	(12.20)
Service Sector	1	25	26
	(0.28)	(13.44)	(4.81)
Others	4	21	25
	(1.13)	(11.29)	(4.62)
Total	355	186	541
	(100.00)	(100.00)	(100.00)
<b>Secondary Occupation</b>			
Agriculture/AH	5	44	49
	(16.67)	(59.46)	(47.12)
Agricultural Labour	13	15	28
	(43.33)	(20.27)	(26.92)
Non Agricultural Labour	7	13	20
	(23.33)	(17.57)	(19.23)
Shop/Business	2	1	3
	(6.67)	(1.35)	(2.88)
Manufacturing	1	1	2
	(3.33)	(1.35)	(1.92)
Others	2	0	2
	(6.67)	(0.00)	(1.92)
Total	30	74	104
	(100.00)	(100.00)	(100.00)

**(ii) Agricultural Situation and Livestock Ownership**

The average land holding size varied between 1.03 to 10.73 acres among the 3 land holding size categories selected by us. Out of this maximum area is being cultivated by them. The fields of all respondents are fully irrigated (Table 5.15).

Table 5.15: Details of Land Holdings

Details	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
Avg Overall Land Holdings	1.03	3.78	10.73	3.41
Average Size of Cultivable Land	1.02	3.68	9.51	3.16
Average Size of Irrigated Land	(100.00)1.02	(100.00)3.68	(100.00)9.51	(100.00)3.16

The main crops of the area are sugarcane, wheat and paddy. Pulses, oilseeds and vegetables are also grown but the average area under them is much lower as compared to the main crops. Sugarcane is the major crop as can be observed from the figures of area under it. In fact there has been a considerable increase in the area under sugarcane if we compare the present situation to that before the roads were constructed. If we look at change then it is found that average area under sugarcane has increased in all the three land holding size groups. However, the picture for other crops is not the same and variations are observed when we compare area cultivated at two different points of time (Table 5.16).

Table 5.16: Average Area Under Crops Per Household (Acres)

	Before PMGSY				After PMGSY			
	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
Wheat	0.97	1.58	2.99	1.80	1.00	1.44	2.80	1.75
Paddy	0.59	0.75	1.78	1.00	0.45	0.74	1.72	0.93
Arhar	0.00	0.03	0.03	0.02	0.00	0.03	0.01	0.01
Urd	0.17	0.25	3.20	1.10	0.14	0.20	0.41	0.24
Chana	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Pulses	0.01	0.01	0.06	0.03	0.00	0.02	0.06	0.03
Other Food	0.38	0.92	0.93	0.74	0.33	0.59	2.05	0.93
Mustard	0.03	0.02	0.30	0.15	0.07	0.10	2.60	0.83
Potato	0.03	0.08	0.18	0.10	0.02	0.06	0.15	0.07
Vegetables	0.06	0.11	0.34	0.16	0.06	1.05	0.35	0.51
Sugarcane	0.84	1.97	6.34	2.89	0.95	2.15	11.07	4.39

Not only has area under sugarcane gone up but even the average yield has registered an increase over the years by around 5 per cent. In the case of wheat average yield has remained more or less the same while that of paddy has increased slightly. Pulses, mustard, potato and vegetables have also witnessed an improvement in the yield rates even though the increase might not be very substantial (Table 5.17).

Table 5.17: Crops wise Productivity (Qtls/Acre)

Crops	Before PMGSY				After PMGSY			
	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
Wheat	13.64	15.62	12.57	13.76	13.09	13.88	13.86	13.66
Paddy	12.85	14.48	12.96	13.36	15.44	13.65	14.10	14.18
Arhar	5.00	3.73	6.67	4.99	6.00	3.54	6.00	4.05
Urd	2.39	14.46	0.62	1.88	11.19	4.58	4.38	5.76
Chana	0.00	0.00	5.33	5.33	0.00	0.00	5.00	5.00
Other Pulses	4.50	2.64	3.57	3.21	0.00	2.75	5.28	4.12
Other Food	12.93	12.94	14.64	13.15	13.92	14.00	14.62	14.23
Mustard	14.03	13.50	16.50	15.18	12.81	14.62	16.55	15.67
Potato	121.25	96.41	116.76	110.50	131.82	138.35	114.17	123.03
Vegetables	124.69	121.25	116.73	118.84	134.84	19.89	138.67	128.48
Sugarcane	240.31	239.73	285.58	255.20	256.52	253.55	281.93	268.11

The increase in area under different crops and an increase in the yield rates of crops have enabled the cultivators to be able to generate greater marketable surplus which can be sold by them in various markets. These details are being provided in Table 5.18. Potato, vegetables and sugarcane being cash crops, the bulk of the produce finds its way to the market. Sale of these crops was very high even before the road under PMGSY was constructed and whatever remains was being retained for seed or domestic consumption. Even in the case of other crops it is observed that either the total output sold as a percentage of total production has almost remained similar at the two points of time or it has registered a marginal increase.

Table 5.18: Sale as % to Total Output

Crops	Before PMGSY				After PMGSY			
	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
Wheat	24.56	44.09	59.02	47.31	22.77	45.74	59.59	48.35
Paddy	25.36	42.15	61.75	48.93	37.55	33.41	55.32	48.69
Arhar	0.00	53.69	65.00	56.91	0.00	48.39	0.00	48.39
Urd	32.49	15.85	39.91	23.78	16.92	50.05	35.10	31.91
Chana	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Pulses	0.00	54.05	74.77	68.44	0.00	60.61	72.63	64.69
Other Food	4.52	9.25	5.49	6.48	5.15	4.01	6.13	5.27
Mustard	0.00	37.51	7.66	8.90	17.56	40.95	29.92	31.61
Potato	81.44	97.72	83.94	89.96	79.31	82.52	79.91	80.72
Vegetables	97.87	99.60	99.77	99.67	97.37	96.97	98.35	99.32
Sugarcane	93.18	98.07	94.48	95.57	88.84	96.69	99.83	96.92

The presence of the road and enterprising qualities of the cultivators have encouraged them to increase the use of better inputs in production and this is adequately reflected in the fact that cost of production per acre for all categories taken together has registered an increase from

Rs.8334 to around Rs.10 thousand which works out to around 21.5 per cent. In fact the increase in cost of production is seen in all the three category of our households (Table 5.19).

Table 5.19: Cost of Production (rupees)

Details	Per Acre Cost of Prod	
	Before PMGSY	After PMGSY
<b>Per Household</b>		
Below 2.5	8613	11548
2.5 to 5.0	9297	12098
Above 5.0	7830	8901
Total	8334	10132

The average price per quintal which people were receiving a few years earlier and presently is indicted in Table 5.20. It is evident that over the years prices of crops have escalated.

Table 5.20: Prices of Crops (Rupees/Qtl)

Crops	Before PMGSY				After PMGSY			
	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total	Below 2.5 Acres	2.5 to 5.0 Acres	Above 5 Acres	Total
Wheat	789	792	793	792	907	947	935	930
Paddy	608	638	674	640	671	743	845	752
Arhar	1800	1838	1825	1829	2000	2163	1950	2037
Urd	1481	1848	1886	1777	2173	1978	2049	2053
Chana	0	0	1800	1800	0	0	2000	2000
Other Pulses	2200	1367	1500	1538	0	2500	2375	2125
Other Foodgrains	638	640	621	633	653	648	625	642
Mustard	1314	1683	1872	1704	1855	1700	2211	1967
Potato	323	268	288	285	278	286	474	369
Vegetables	337	274	318	304	401	368	387	382
Sugarcane	80	87	88	85	103	101	104	103

The villagers own livestock to supplement their incomes from agriculture. These include milch animals, bullocks, goats etc. On an average each household has one cow and one or two buffaloes. Goats and poultry are being reared mainly by the non-cultivating households. The average number of animals being maintained per household have gone up marginally over the years (Table 5.21).

Table 5.21: Details of Livestock Ownership (average Number)

Crops	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
Cow	1.22	0.89	1.17	1.25	1.11	1.23
Buffalo	1.83	1.44	1.73	1.92	1.72	1.87
Bullocks	1.19	1.00	1.17	1.13	1.83	1.21
He Buffalos	1.00	0.94	0.99	1.02	0.88	1.00
Young Stock	1.41	1.03	1.30	2.04	1.57	1.90
Goats	0.00	1.00	1.00	0.00	4.50	4.50
Poultry	0.00	5.00	5.00	0.00	8.00	8.00
Others	0.00	1.00	1.00	0.00	1.25	1.25

### (iii) Income of the Households

Since Meerut is agriculturally a very prosperous district and a high percentage of people are engaged in agriculture it is obvious that agriculture would be contributing the most towards the household incomes of the cultivating households. Its share was almost 64 per cent before road was constructed and there has been no change since then. However, in absolute terms per household income from agriculture has gone up by around 34 per cent. Animal husbandry is the other significant contributor towards household incomes of cultivators with a share of around 15-18 per cent at both the points of time. Income from wages as well as other sources too has increased. When we look at the non-cultivating households other economic activities and agriculture were contributing around 40 and 27 per cent towards the income of the households. However, in the present situation the contribution of other economic activities has gone up by around 6 percentage points while that of agriculture has declined despite the fact that absolute income from agriculture has declined despite the fact that absolute income from agriculture has gone up by around 16 per cent (for details please see Table 5.22). Similarly there has been a corresponding increase in the share of income from sale of milk, wages and other sources such as pensions, remittances, rent, etc. On the whole therefore the annual household income of the cultivating households has increased by around 33 per cent considering the time prior to road construction and the present situation. This works out to a monthly income going up from around Rs.8362 to around Rs.9943 per month. The income levels of non-cultivating households is much less as their agricultural incomes have registered a higher increase of around 44 per cent and if we look at the average household income per month from around Rs.6088 to around Rs.8820. Taking all the households together the household incomes have gone up from Rs.7565 to Rs.9550 per month. If we look at the figures of household incomes as obtained in Meerut and that of our other three districts the overall prosperity of the region stands out effectively. While Table 5.22 provides a consolidated picture for all the sectors together detailed information regarding income from sale of milk, meat and animals, wages, other economic activities and other economic activities can be seen in Annexure 5.3, 5.4, 5.5 and 5.6 at the end of the chapter.

Table 5.22: Average Income from all Sources

Average Income from Different Sectors	2-3 Years Before			Present Situation			Change in Income %		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
Agriculture	48591	21548	39576	64895	24584	51458	34	14	30
	(63.72)	(40.47)	(57.69)	(63.93)	(33.68)	(55.90)			
Animal Husbandry	11183	7285	9867	18562	11395	16143	66	56	64
	(14.67)	(13.68)	(14.38)	(18.29)	(15.61)	(17.54)			
Other Products of Animal Husb	3999	1604	3191	1860	442	1381	-53	-72	-57
	(5.24)	(3.01)	(4.65)	(1.83)	(0.61)	(1.50)			
Wages	710	4822	2098	1108	6825	3037	56	42	45
	(0.93)	(9.06)	(3.06)	(1.09)	(9.35)	(3.30)			
Other eco. Activities	3397	14490	7141	2922	24526	10213	-14	69	43
	(4.45)	(27.22)	(10.41)	(2.88)	(33.60)	(11.10)			
Other Sources	8373	3490	6725	12155	5231	9818	45	50	46
	(10.98)	(6.56)	(9.80)	(11.98)	(7.17)	(10.67)			
Total Income	76253	53239	68598	101502	73003	92050	33	37	34

**(iv) Employment Generation among Wage Earners**

Persons working as wage earners in agricultural and non-agricultural activities are shown in Table 5.23 separately for males and females. As far as agricultural labourers are concerned the total works, both males as well as females have not changed much if we look at prior to road construction and the situation at present. However, what can be seen is that the average days of employment have gone up marginally among both males and females. Even with respect to non-agricultural works the increase in numbers is minimal but average days of employment has gone up by around 9 per cent taking together cultivating and non-cultivating households. It may, therefore, be concluded that availability of the all-weather road has improved mobility among wage earners and those who wish to go out to seek employment are able to do so with relative ease now as compared to the period when proper road connectivity was missing. The advantage of increased mobility has led to increased household incomes from wages.

Table 5.23: Person Days Employed by Labourers and Income

Ag Labour	Before PMGSY			After PMGSY		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Male</b>						
Number	9	20	29	10	19	29
Average Days	61	82	75	68	85	79
<b>Female</b>						
Number	3	8	11	3	9	12
Average Days	38	49	46	52	54	54
<b>Non Ag Labour</b>						
<b>Male</b>						
Number	13	37	50	13	40	53
Average Days	82	107	101	94	115	109
<b>Total</b>						
Number	25	65	90	26	68	94
Average Days	69	92	86	79	97	92

### (v) Marketing of Various Products

The fact that villages now have an all-weather road has facilitated greater movement of goods for sale to markets outside the villages. The scope of getting a better price for the produce whether in agriculture, sale of milk or manufactured goods is higher if it is sold in markets outside the village. Our table which indicates the percentage of sale carried out within the village, in the nearest Haat and other Haats beyond 3 kms clearly reveals that the scale of preference of individuals have tilted in favour of selling their produce in relatively higher proportion in markets outside the village. The cultivating households for instance sold around 45 per cent of the agricultural produce in the Haats which were beyond 3 kms when the village did not have an all-weather road. This share has gone up to around 52 per cent. The better prices which they are now getting also accounts at least partly in their increased incomes from sale of agricultural surplus. As compared, the non-cultivating households are still selling almost 49 per cent of the agricultural produce in local markets. But even in their case there is a definite improvement as the same households used to sell around 56.5 per cent of the produce in the local market. Manufacturing products and other products are being sold by non-agricultural households and in this case there is once again an increase of around 10 per cent in the share which is being sold in markets out of the village. These are positive indicators of the impact which has been made by the roads in these villages (please see Table 5.24).

Table 5.24: Details Regarding Marketing of Products

Place of Sale	Before PMGSY		After PMGSY	
	Cultivating Households	Non Cultivating Households	Cultivating Households	Non Cultivating Households
<b>Agriculture produce</b>				
Within village	33.56	56.50	29.31	48.82
Nearest Haat (with in 3 kms)	19.73	7.68	23.35	16.43
Haat beyond 3 kms	45.41	29.50	51.78	31.18
<b>Animal Husbandry Produce</b>				
Within village	79.85	78.18	84.45	70.91
Nearest Haat (with in 3 kms)	10.74	10.91	11.85	10.91
Haat beyond 3 kms	4.22	10.91	1.85	18.18
<b>Manufacturing</b>				
Within village	-	54.70	-	44.24
Nearest Haat (with in 3 kms)	-	21.18	-	24.71
Haat beyond 3 kms	-	24.12	-	31.05
<b>Others</b>				
Within village	-	40.00	-	38.33
Nearest Haat (with in 3 kms)	-	10.00	-	8.33
Haat beyond 3 kms	-	50.00	-	53.33

### (vi) Ownership of Assets among Households

Agriculture we know is the dominant activity in Meerut and sugarcane is cultivated on a large scale all over the district. Thus, agricultural implements automatically become a significant asset in the possession of the households. In the district we find an increase in ownership of all the agricultural implements among our households. Being a prosperous district it was also observed that the levels of household incomes are relatively higher as compared to other districts, the individuals have also increased their other assets such as vehicles and household assets such as TV and mobile connections etc. (Details can be seen in Table 5.25).

Table 5.25: Details of various assets among HH (average)

	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Agr Implements</b>						
Plough	1.00	1.00	1.00	1.15	1.00	1.13
Bullock Cart	1.00	0.91	0.99	1.01	1.00	1.01
Tractor	1.00	1.00	1.00	1.04	1.00	1.03
Chaff Cutter	0.99	1.00	1.00	1.00	1.36	1.09
Others	1.00	1.00	1.00	1.00	1.00	1.00
<b>Transportation</b>						
Cycle	1.08	1.05	1.07	1.19	1.19	1.19
Motor Cycles	0.81	0.56	0.77	1.22	1.06	1.19
Dunlop Jeep		0.00	0.00		1.00	1.00
Jeep	0.86	0.00	0.67	1.00	1.00	1.00
Others	1.00	0.78	0.80	1.00	1.00	1.00
<b>Non Agr Implements</b>						
Flour/Rice/Dal Mill	0.50	0.83	0.75	1.00	1.00	1.00
Sugarcane Ghani	1.00	0.00	0.50	1.00	1.00	1.00
Hathkargha	1.00		1.00	1.00		1.00
Others	1.00	1.00	1.00	1.00	1.00	1.00
<b>HH Assets</b>						
Radio	0.99	0.88	0.96	0.95	1.00	0.96
Television	0.88	0.76	0.85	1.03	1.00	1.02
Telephone	0.83	0.83	0.83	1.02	0.83	1.00
Mobile	0.46	0.41	0.45	1.08	1.02	1.06
Others	0.00	1.00	0.33	1.50	1.00	1.33
<b>Total</b>	<b>0.92</b>	<b>0.84</b>	<b>0.90</b>	<b>1.06</b>	<b>1.10</b>	<b>1.07</b>

### (vii) Saving in Travel Time

One of the direct impacts of having a good quality road is that considerable time is saved in traveling by different modes of transportation. Not only is time saved but the entire journey becomes more comfortable. Table 5.26 indicates the time which took people to reach the nearby Haat for the sale for their produce or for the purchase of inputs and other items of domestic consumption. Whether means of transport was manual such as cycle or animal driven like bullock/Dunlop cart or using automated vehicles much of the time has been saved by virtue of having a smooth metal road connecting the village to the market. Time saved not only adds to the comfort level but also motivates greater mobility.

Table 5.26: Time in Transportation Table (in Minutes)

Details	Before PMGSY	After PMGSY
Cycle	42	29
Bullock Cart	67	52
Dunlop Cart	61	51
Tempo	33	20
Tractor	47	37
Jeep	24	14
Truck	69	46

**(viii) Emergence of New Commercial Activities among Households**

The qualities of entrepreneurship among the cultivating households seems limited since new commercial activities were taken up in only around 3 per cent households and all of them have opened a shop selling items of daily use in the households. The non-cultivating households, on the other hand appear to be more enterprising since in 16 per cent households some new commercial activity has been initiated. Half the new enterprises are shops while the next in importance are starting a transport business. The other activity to emerge is tailor shops. The lesser involvement of cultivating households in taking up commercial activities could be because agriculture and animal husbandry being a full time occupation, the working members do not feel the need for taking up any new work. Those who are wage earners do not have the requisite funds to be able to start a new enterprise. Table 5.27 provides all the relevant details about new commercial activities.

Table 5.27: New Activities Initiated after Road Construction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	5 (3.14)	16 (19.75)	21 (8.75)
No	154 (96.86)	65 (80.25)	219 (91.25)
Total	159 (100.00)	81 (100.00)	240 (100.00)
<b>If Yes than of What Type</b>			
Shop	5 (100.00)	8 (50.00)	13 (61.91)
Transport	0 (0.00)	5 (31.25)	5 (23.81)
Tailor	0 (0.00)	2 (12.50)	2 (9.52)
Jajmani	0 (0.00)	1 (6.25)	1 (4.76)
Dairy	0 (0.00)	2 (9.52)	2 (7.69)
Asha	0 (0.00)	1 (4.76)	1 (3.85)
Repairing	0 (0.00)	2 (9.52)	2 (15.38)
Total	5 (100.00)	21 (100.00)	26 (100.00)

**(ix) Improvement in Availment of Educational and Medical Facilities**

Increase in the levels of income, agricultural production are some of the direct benefits in which availability of road has played a part, has also resulted in indirect benefits as well. It may not be possible to quantify these benefits but people realize their importance and rate them high in their scale of preferences because the ultimate gain results in improving the condition of the household. The response of the people clearly highlight the fact that according to them availability of an all-weather road has facilitated the households in the access to education and health facilities.

Details with respect to educational facilities are given in Table 5.28, which shows that around 70 per cent respondents agree that it has become more convenient for their children to attend school. Children had to go out of the village for education beyond the primary level and so long as the road was not good it was inconvenient because it took time and more energy. However, a metal road has improved mobility among children. The respondents even feel that it has even become relatively more convenient for the children even to attend school within the village itself.

**Table 5.28: Changes Observed in Field of Education after Road Construction**

Details	Cultivating Households	Non Cultivating Households	Total
Yes	113	53	166
	(71.07)	(65.43)	(69.17)
No	46	28	74
	(28.93)	(34.57)	(30.83)
Total	159	81	240
	(100.00)	(100.00)	(100.00)
<b>If Yes, how (Nos)</b>			
Going to School	86	49	135
	(54.09)	(60.49)	(56.25)
Teachers have become regular	59	21	80
	(37.11)	(25.93)	(33.33)
Easy to avail higher education	64	34	98
	(40.25)	(41.98)	(40.83)
Aganwadi centre has opened	12	8	20
	(7.55)	(9.88)	(8.33)
Others	5	2	7
	(3.14)	(2.47)	(2.92)
Total Households	159	81	240

The impact of the road in availing medical facilities is equally significant and has been endorsed by around three-fourths of our respondents. The Asha/ANM have increased the frequency of their visits to the village. Even for shifting patient from the village to the PHC, government hospital or a private clinic it is so much more convenient as well as time saving.

During the period when a proper road did not exist, it used to be extremely troublesome for the patients to be transported from the village for medical treatment to the nearest place convenient. The problem was particularly more severe in case medical attention was required at night (see Table 5.29).

Table 5.29: Changes observed in availing Medical Facilities after road constriction

Details	Cultivating Households	Non Cultivating Households	Total
Yes	121 (76.10)	57 (70.37)	178 (74.17)
No	38 (23.90)	24 (29.63)	62 (25.83)
Total	159 (100.00)	81 (100.00)	240 (100.00)
<b>If Yes, how (Nos)</b>			
Medical Facilities available within village	1 (0.63)	0 (0.00)	1 (0.42)
Asha/ANM come regularly	65 (40.88)	39 (48.15)	104 (43.33)
Reaching PHC is easy	83 (52.20)	35 (43.21)	118 (49.17)
Contacting private doctor easily	93 (58.49)	44 (54.32)	137 (57.08)
Reduction in cost of medicine	73 (45.91)	29 (35.80)	102 (42.50)
Reduction in cost of transport	1 (0.63)	0 (0.00)	1 (0.42)
Total Households	159	81	240

**(x) Changes in the Flow of Traffic, Repair and Maintenance of Vehicles**

As was done in the other districts, a study of the flow of traffic was conducted in the selected villages of Meerut as well and a record was maintained of the various types of vehicles which had been coming in or going out of the village. The details related to various types of vehicles are provided in Table 5.30. In all our villages there is a reasonable flow of traffic every day. The main movement of course is of cycles, scooters/motor cycles and bullock carts. This is understandable also because the village roads are not wide enough to facilitate free movement of trucks or buses. However, cars/jeeps, tractors as well as buses and trucks do come to the village every day even though the frequency of their movement is not very high. In fact our discussion with the respondents and other influential persons brought out the fact that over the past few years a steady growth has taken place in the flow of traffic and if the flow is compared today with that prior to road construction under PMGSY the increase would be around 20-25 per cent.

Table 5.30: Details about flow of Traffic

Details	Bhola	Bhamauri	Alamgiripur	Meerpur	Brahmpur Morana	Manpuri	Nagala Kaboolpur	Raidara
Incoming								
Cycle	46	152	96	96	108	56	152	70
Motor Cycle/Scoter	38	96	62	168	72	22	46	66
Car/Jeep	2	8	16	22	12	8	12	10
Tractor	6	22	62	10	6	6	42	10
Bus	0	0	0	0	2	2	0	6
truck	0	0	0	4	6	0	4	6
Tonga	0	10	2	2	0	2	14	10
Rickshaw Trolley	10	0	0	0	14	4	18	0
Bullock Cart	12	76	0	18	18	32	56	40
Vikram	2	0	0	0	2	0	14	0
Jugar	4	44	72	22	10	0	0	4
Outgoing								
Cycle	68	136	84	120	150	44	194	82
Motor Cycle/Scoter	42	114	56	138	66	18	36	50
Car/Jeep	2	6	12	28	4	4	16	12
Tractor	10	14	56	16	4	4	46	12
Bus	0	0	0	0	2	2	0	6
truck	0	0	0	10	6	0	6	8
Tonga	6	8	4	0	0	0	10	10
Rickshaw Trolley	6	0	0	0	10	6	16	0
Bullock Cart	16	52	0	22	10	26	64	64
Vikram	2	0	0	2	2	0	10	0
Jugar	2	34	82	16	12	0	0	4

Not only has one witnessed an increase in the flow of traffic but another positive impact of the road has been on the repair and maintenance as well as saving on cost of fuel. The overall cost of repair and maintenance and fuel together has resulted in a reduction of around 15 per cent on an average (Table 5.31).

Table 5.31: Impact of Road on Repair/Maintenance of vehicles on fuel cost

Details	Cultivating Households	Non Cultivating Households	Total
Yes	149	76	225
	(93.71)	(93.83)	(93.75)
No	10	5	15
	(6.29)	(6.17)	(6.25)
Total	159	81	240
	(100.00)	(100.00)	(100.00)
If yes how much (in %)			
Repair and Fuel Cost	14.55	15.92	15.21

The roads have increased the movement of jeeps, jugads and tempos which have made it very convenient for people to use these vehicles on a shared basis for going out of the village and children are using them for attending school. The overall mobility has gone up and as can

be expected the most important reasons being marketing, education and health. The other reasons are social ceremonies outside the village and for entertainment purposes (Table 5.32). Since most of the work involves a movement of upto 5 kms from the village the maximum visits per month are also the highest in this category and on an average around 9 visits are being made per month. The average drops to half when frequency of visits is seen between 5-10 kms and even further for distances beyond 10 kms.

Table 5.32: Main Purpose for Going Out of village

Details	Cultivating Households	Non Cultivating Households	Total
Sale/Business	159	81	240
	(100.00)	(100.00)	(100.00)
Purchasing	159	81	240
	(100.00)	(100.00)	(100.00)
Education Purpose	152	82	234
	(95.60)	(101.23)	(97.50)
Health Facility	150	69	219
	(94.34)	(85.19)	(91.25)
Social Visits	130	48	178
	(81.76)	(59.26)	(74.17)
Entertainment	72	17	89
	(45.28)	(20.99)	(37.08)
Others	18	2	20
	(11.32)	(2.47)	(8.33)
Total Households	159	81	240
<b>Frequency of Traveling (per month)</b>			
Within 5 Kms	8.82	8.96	8.87
5 to 10 Kms	4.10	4.62	4.28
Above 10 kms	2.40	2.93	2.58

#### (xi) Perception of Respondents

We invited the respondents to express their opinion about the ways in which they feel that the roads constructed under PMGSY have produced a positive impact in the village as a whole on the one hand and on the living conditions of the respondents themselves. We shall look at both these aspects separately and begin by looking at how the village itself has been affected. To begin with a positive response was received by around 79 per cent respondents who feel that positive changes can be seen in the condition of their village. The most significant aspect they single out is the ease with which people are able to move out of the villages for selling their agricultural produce or other items manufactured by them and at the same time are also able to frequently visit the market for purchase of various inputs and other items required by them. Road has also made access to health and education easier. Since people have the freedom to move out more conveniently they are able to interact with people outside the village

and the level of awareness of people in general has gone up. Finally the road has reduced travel time and cost of traveling (Table 5.33).

Table 5.33: Improvement in Overall Condition of Village

Details	Cultivating Households	Non Cultivating Households	Total
Procurement of Seed Fertilizer	126	63	189
	(79.25)	(77.78)	(78.75)
In marketing	127	67	194
	(79.87)	(82.72)	(80.83)
Saving of time in traveling	79	52	131
	(49.69)	(64.20)	(54.58)
Saving in Cost of traveling	55	26	81
	(34.59)	(32.10)	(33.75)
Improvement in education	30	15	45
	(18.87)	(18.52)	(18.75)
Improvement in availing health facilities	27	17	44
	(16.98)	(20.99)	(18.33)
Awareness is increased	159	81	240
	(100.00)	(100.00)	(100.00)
Other	1	0	1
	(0.63)	(0.00)	(0.42)
Total Households	159	81	240

If we consider their views regarding their own living conditions we again have received a positive response from 80 per cent respondents and they are of the opinion that their level of living has improved as a result of the all-weather road. The first aspect towards which they draw our attention is the fact that their levels of income have gone up because of the fact that they can use more and better inputs, can sell in bigger Haats, move more conveniently for doing manual labour or any other job etc. It may be recalled that the overall household income had gone up by about 34 per cent and this has enabled them to improve their living conditions. They can now spend relatively more on education and health and the increase in number of privately owned vehicles also is an indicator of the impact which increased incomes have resulted in. They, therefore, feel that their lifestyle has improved for the better (see Table 5.34).

Table 5.34: Changes in Living Condition

Details	Cultivating Households	Non Cultivating Households	Total
Yes	123	70	193
	(77.36)	(86.42)	(80.42)
No	36	11	47
	(22.64)	(13.58)	(19.58)
Total	159	81	240
	(100.00)	(100.00)	(100.00)

Table 5.34 (contd....)

If yes Than what type			
Education	83	30	113
	(52.20)	(37.04)	(47.08)
Health	29	21	50
	(18.24)	(25.93)	(20.83)
Increase in Income	117	61	178
	(73.58)	(75.31)	(74.17)
Improvement in Living Condition	38	21	59
	(23.90)	(25.93)	(24.58)
Improvement in Transport	70	34	104
	(44.03)	(41.98)	(43.33)
Saving in Transportation Cost	32	11	43
	(20.13)	(13.58)	(17.92)
Total Households	159	81	240

The respondents were also asked to give their opinion about the PMGSY scheme itself and in case it had some shortcomings then their suggestions to overcome the same were also taken. Around three-fourths of the respondents have reported that the quality of the road at the time of construction was good or very good. At the same time they are also satisfied with the connectivity which has been provided through this road as the positive responses are in excess of 80 per cent. However, they complain that regular maintenance is not being done and this is the point of dissatisfaction among them. Even in the case of the other districts it was found that maintenance is a neglected aspect despite the fact that there is a five year provision for it built into the contract itself (see Table 5.35).

Table 5.35: Perception of Respondents about PMGSY

Details	Cultivating Households	Non Cultivating Households	Total
<b>How was the quality of the Road</b>			
Very Good	53	32	85
	(33.33)	(39.51)	(35.42)
Good	68	27	95
	(42.77)	(33.33)	(39.58)
Average	19	14	33
	(11.95)	(17.28)	(13.75)
Poor	19	8	27
	(11.95)	(9.88)	(11.25)
Total	159	81	240
	(100.00)	(100.00)	(100.00)
<b>How is its present condition</b>			
Very good	4	5	9
	(2.52)	(6.17)	(3.75)
Good	58	33	91
	(36.48)	(40.74)	(37.92)
Has deteriorated	97	43	140
	(61.01)	(53.09)	(58.33)
Total	159	81	240
	(100.00)	(100.00)	(100.00)

Table 5.35 (contd....)

<b>Is connectivity appropriate</b>			
Yes	130 (81.76)	67 (82.72)	197 (82.08)
No	29 (18.24)	14 (17.28)	43 (17.92)
Total	159 (100.00)	81 (100.00)	240 (100.00)
<b>Is repair and maintenance of road being done timely and properly</b>			
Yes	22 (13.84)	21 (25.93)	43 (17.92)
No	137 (86.16)	60 (74.07)	197 (82.08)
Total	159 (100.00)	81 (100.00)	240 (100.00)

With a high degree of dissatisfaction regarding irregular and casual attitude with respect to repairs and maintenance of roads constructed under PMGSY it is but obvious that the suggestion heading the list, as measures which need to be taken to make the scheme more efficient, is that the authorities must ensure that this aspect does not remain neglected and that contractors should be made accountable if there are any lapses (please see Table 5.36). Some even feel that the quality of construction can be improved still further by doing brick soleing on the sides of the metal road to ensure longer life of the road. Another general opinion emerging in all districts has been that although people are initially consulted at the time when the survey work is being undertaken, but greater people's participation is desirable.

Table 5.36: Suggestions of Respondents about PMGSY

Details	Cultivating Households	Non Cultivating Households	Total
Maintenance of road	100 (62.89)	48 (59.26)	148 (61.67)
Quality of Road	89 (55.97)	44 (54.32)	133 (55.42)
Participation of Villagers	77 (48.43)	45 (55.56)	122 (50.83)
Connectivity to main road	21 (13.21)	5 (6.17)	26 (10.83)
Roads are according to Norms	51 (32.08)	28 (34.57)	79 (32.92)
Brick soling on either side of road	103 (64.78)	52 (64.20)	155 (64.58)
Others	2 (1.26)	3 (3.70)	5 (2.08)
Total	159	81	240

### C. ANALYSIS OF HOUSEHOLDS OF CONTROL VILLAGES

#### (i) General Information

Our respondents were mainly from the OBC category (62 per cent approximately) while around one-fourth belonged to the SC/ST group. The percentage of illiterates was low (below 10 per cent overall) and around 13 per cent were either graduates or post-graduates. The main concentration was in two categories of upper primary or those who had studied upto High School/Intermediate (Table 5.37).

Table 5.37: Details About Respondents

Details	Cultivating Households	Non Cultivating Households	Total
<b>Caste</b>			
General	6 (15.38)	3 (14.29)	9 (15.00)
OBC	25 (64.10)	12 (57.14)	37 (61.67)
SC/ST	8 (20.51)	6 (28.57)	14 (23.33)
Total	39 (100.00)	21 (100.00)	60 (100.00)
<b>Average Age</b>			
<b>Educational Status</b>			
illiterate	4 (10.26)	1 (4.76)	5 (8.33)
Literate	5 (12.82)	2 (9.52)	7 (11.67)
Upper Primary	13 (33.33)	9 (42.86)	22 (36.67)
HS/Inter	12 (30.77)	6 (28.57)	18 (30.00)
Graduation	4 (10.26)	1 (4.76)	5 (8.33)
Post Graduation	1 (2.56)	2 (9.52)	3 (5.00)
Total	39 (100.00)	21 (100.00)	60 (100.00)
<b>Occupational Status</b>			
Agriculture/Animal Husbandry	39 (100.00)	0 (0.00)	39 (65.00)
Small/Big Shop	0 (0.00)	4 (19.05)	4 (6.67)
Self employed	0 (0.00)	14 (66.67)	14 (23.33)
Manufacturing	0 (0.00)	3 (14.29)	3 (5.00)
Total	39 (100.00)	21 (100.00)	60 (100.00)

If we look at the households of our control villages the overall average size of the household was around 7.25. The maximum family members were concentrated in the age group 15-35 years. Around one-third had studied upto upper primary level while another 26 per cent upto High School or Intermediate. Graduates and Post-Graduates accounted for around 10 per cent of the total while around 11 per cent had some technical education. Workers accounted for around 35.6 per cent of the total (for details see Table 5.38).

Table 5.38: Details About Households

Details	Cultivating Households	Non Cultivating Households	Total
<b>Sex</b>			
Male	162 (55.48)	81 (56.64)	243 (55.86)
Female	130 (44.52)	62 (43.36)	192 (44.14)
Total	292 (100.00)	143 (100.00)	435 (100.00)
<b>Age</b>			
0 to 15	75 (25.68)	44 (30.77)	119 (27.36)
15 to 35	124 (42.47)	58 (40.56)	182 (41.84)
35 to 60	70 (23.97)	26 (18.18)	96 (22.07)
Above 60	23 (7.88)	15 (10.49)	38 (8.74)
Total	292 (100.00)	143 (100.00)	435 (100.00)
<b>Educational Status</b>			
Illiterate	37 (12.67)	24 (16.78)	61 (14.02)
Literate	12 (4.11)	7 (4.90)	19 (4.37)
Upper Primary	105 (35.96)	44 (30.77)	149 (34.25)
HS/Inter	75 (25.68)	38 (26.57)	113 (25.98)
Graduate	25 (8.56)	5 (3.50)	30 (6.90)
Post Graduate	11 (3.77)	4 (2.80)	15 (3.45)
Others	27 (9.25)	21 (14.69)	48 (11.03)
Total	292 (100.00)	143 (100.00)	435 (100.00)
<b>Working Status</b>			
Child	26 (8.90)	20 (13.99)	46 (10.57)
Student	86 (29.45)	38 (26.57)	124 (28.51)

Table 5.38 (contd...)

Working	97	58	155
	(33.22)	(40.56)	(35.63)
Housewife	74	23	97
	(25.34)	(16.08)	(22.30)
Pensioner	1	0	1
	(0.34)	(0.00)	(0.23)
Old	8	4	12
	(2.74)	(2.80)	(2.76)
Total	292	143	435
	(100.00)	(100.00)	(100.00)
<b>Primary Occupation</b>			
Agriculture/Animal Husbandry	74	20	94
	(75.51)	(34.48)	(60.26)
Agr Labour	1	0	1
	(1.02)	(0.00)	(0.64)
Non Agr Labour	7	2	9
	(7.14)	(3.45)	(5.77)
Shop/Business	0	7	7
	(0.00)	(12.07)	(4.49)
Manufacturing	0	5	5
	(0.00)	(8.62)	(3.21)
Job	15	8	23
	(16.33)	(13.79)	(15.38)
Services	0	11	11
	(0.00)	(18.97)	(7.05)
Others	0	5	5
	(0.00)	(8.62)	(3.20)
Total	97	58	155
	(100.00)	(100.00)	(100.00)
<b>Occupation Secondary</b>			
Agriculture/Animal Husbandry	4	22	26
	(40.00)	(78.57)	(68.42)
Agr Labour	3	3	6
	(30.00)	(10.71)	(15.79)
Non Agr Labour	3	3	6
	(30.00)	(10.71)	(15.79)
Total	10	28	38
	(100.00)	(100.00)	(100.00)

(ii) **Agricultural Situation and Livestock Ownership**

We selected the cultivating households from three different categories by size of holding. Taking all the three categories together the average land holding size was 3.71 acres of which 3.69 is under cultivation and the entire area is irrigated (Table 5.39).

Table 5.39: Details of Land Holding (Acres)

Details	Below 2.5	2.5 to 5.0	Above 5.0	Total
Avg Overall Land Holding	1.33	3.87	9.16	3.71
Average Size of Cultivation	1.33	3.87	9.09	3.69
Average Size of Irrigation	1.33	3.87	9.09	3.69

The main crops grown among the households were wheat and sugarcane. Sugarcane as we are aware is the main cash crop of the region and so it was natural that the highest area is under the crop. Paddy and other foodgrains were the others with relatively higher area under cultivation. Over the years it is observed that in all the prominent crops the average cultivated area has gone up slightly if we compare the present situation to that before road construction. This slight increase is found among all the three land holding categories (Table 5.40).

Table 5.40: Average Area Under Crops Per Household (acres)

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	1.14	1.44	2.68	1.72	1.25	1.60	2.79	1.84
Paddy	0.40	0.53	1.04	0.64	0.44	0.68	1.19	0.75
Arhar	0.04	0.00	0.00	0.02	0.06	0.00	0.00	0.02
Urd	0.11	0.22	0.61	0.30	0.10	0.22	0.65	0.31
Other Food Grains	0.55	0.48	1.23	0.74	0.57	0.52	1.15	0.73
Mustard	0.03	0.10	0.45	0.18	0.04	0.10	0.43	0.18
Potato	0.00	0.00	0.08	0.03	0.00	0.00	0.06	0.02
Sugarcane	1.06	2.34	6.04	3.02	1.34	2.24	6.40	3.20

While the area under sugarcane went up in our control villages there was a slight decline in the yield rates. The yield rates of wheat and paddy on the other hand registered an increase. In the case of the other main crops there was not much of a difference. Among different land holding size categories there were variations and these can be seen in Table 5.41.

Table 5.41: Crops Wise Productivity (Qtls/Acre)

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	14.28	14.03	13.85	14.00	15.00	14.86	14.90	14.91
Paddy	15.14	15.62	15.20	15.30	15.98	16.36	16.57	16.38
Arhar	5.00	0.00	0.00	5.00	5.00	0.00	0.00	5.00
Urd	4.45	4.95	4.94	4.88	4.64	5.59	4.83	4.99
Mustard	4.75	4.37	4.95	4.83	5.18	5.08	5.20	5.17
Potato	0.00	100.00	112.90	112.24	0.00	100.00	114.29	113.51
Sugarcane	312.36	266.80	254.10	264.70	250.53	268.38	245.96	251.88

If we look at the sale of the various crops as a percentage of total output it is observed that the lowest holding size category sell only a small percentage of the wheat and paddy produced by it. Over the years there has not been much change in the total sale either.

Sugarcane, being a cash crop is almost entirely sold in the market (92 per cent) and this too has not witnessed any change. As we move to the higher land holding sizes the marketable surplus automatically increases and this is reflected in the much higher sale of the different crops among both categories of land holders. This share has tended to increase in almost all crops except for sugarcane. But as far as sugarcane is concerned the decline is marginal and that too in the land holding group having 2.5 to 5.0 acres. For details please refer to Table 5.42.

Table 5.42: Sale as % to Total Output

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	22.76	35.36	59.19	43.63	27.35	41.75	65.73	49.38
Paddy	14.29	34.58	50.53	38.06	14.25	42.36	58.65	44.65
Arhar	0.00	0.00	0.00	0.00	37.50	0.00	0.00	37.50
Urd	0.00	46.10	62.41	50.83	0.00	49.38	61.09	51.37
Other Food Grains	8.39	0.00	28.17	16.92	8.84	0.00	23.15	13.90
Mustard	0.00	16.95	44.86	37.63	0.00	45.45	47.17	43.12
Potato	0.00	0.00	87.62	83.64	0.00	0.00	85.00	80.95
Sugarcane	92.32	96.05	97.68	96.46	91.61	95.58	97.70	96.26

Since Meerut is agriculturally a prosperous district, cultivators ever in our control villages have shown the tendency to increase the uses of inputs such as better quality seeds, chemical fertilizers and pesticides, etc. Consequently the per acre cost of production has registered an increase in all 3 categories of land holding sizes. On the whole, if we take all our cultivating households together the cost of production has increased from Rs.8839 per acre to around Rs.11 thousand and this works out to an increase of around 25 per cent (Table 5.43).

Table 5.43: Cost of Production (rupees)

Details	Per Acre Cost of Prod	
	2-3 Years Before	Present Situation
<b>Per Household</b>		
Below 2.5	9938	12733
2.5 to 5.0	8744	11033
Above 5.0	8500	10556
Total	8839	11094

Over the years the price of various crops have shown an increasing trend. Table 5.44 provides an idea of the price rise among some of the important crops which are cultivated in the control villages.

Table 5.44: Price of Crops (Rupees/Quintal)

Crops	2-3 Years Before				Present Situation			
	Below 2.5	2.5 to 5.0	Above 5	Total	Below 2.5	2.5 to 5.0	Above 5	Total
Wheat	849.64	826.54	835.83	837.69	972.86	971.15	976.25	973.33
Paddy	396.79	446.15	620.42	482.05	563.93	582.31	711.67	615.51
Arhar	314.29	0.00	0.00	112.82	357.14	0.00	0.00	128.21
Urd	714.29	1123.08	1558.33	1110.26	650.00	1480.77	1777.08	1273.72
Mustard	321.43	588.46	1195.83	679.49	525.00	536.54	1395.83	796.79
Sugarcane	89.14	92.31	93.17	91.44	101.29	103.31	105.25	103.18

Ownership of livestock among the households is shown with the help of Table 5.45. Each household has at least one cow and one buffalo. The non-agricultural households also keep goats and sheep and some poultry. But the average numbers owned per household is low. Moreover, over the years not much change is observed in the ownership pattern.

Table 5.45: Details of Livestock Ownership (average Number)

Details	2-3 Years Before			Present Situation		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
Cow	1.05	1.11	1.07	1.25	0.67	1.07
Buffalo	1.74	1.53	1.67	1.74	1.53	1.67
Bullocks	2.00	1.00	1.33	2.00	1.00	1.33
He-Bullocks	1.06	1.00	1.05	1.09	1.00	1.08
Young Stock	1.68	0.78	1.38	2.16	1.50	1.95
Goats	1.00	3.00	2.33	0.00	3.00	2.00
Sheep	0.00	3.00	3.00	0.00	3.00	3.00
Poultry	0.00	10.00	10.00	0.00	8.00	8.00
Others	0.00	1.00	1.00	0.00	1.00	1.00

### (iii) Income of the Households

Despite the fact that our control villages do not have an all weather road but they are otherwise prosperous and this can be evidenced in Table 5.46, which gives the average household income from various sources. The agricultural incomes have gone up by around 22 per cent as a result of some improvement in productivity levels which has ensured higher marketable surplus and also because prices have gone up. Even the income from sale of milk among the cultivating households has increased although there is hardly any change in the case of non-cultivating households. A general pattern which has been observed in all our districts has been that the people's preferences have shown a shift from dealing in sale of meat and animals over the years as each district has registered a considerable decline in income from this source. In all the other sources too per household incomes have increased if we look at figures of a few years earlier to those at present. This shows that people are hard working and enterprising and

have overcome the disadvantage. Since agriculture is the dominant activity agriculture and animal husbandry contributed around 73 per cent share in the total household income. This share has declined and at present it is roughly 64 per cent. The annual per household income is relatively higher among the cultivating households as compared to the non-cultivating households at both points of time. On the whole the incomes of households have registered an increase of around 26 per cent between the two points of time. The average monthly income of cultivating households presently works out to approximately Rs.9940 whereas the corresponding figure for non-cultivating households is Rs.8820 approximately (for details please see Table 5.46). Separate tables have been prepared about income earned from sale of milk, animals and meat, other economic activities and other sources and these are given as Annexures 5.7, 5.8, 5.9 and 5.10 at the end of this chapter.

Table 5.46: Average Income Per Household From Different Sources (Rs.)

Average Income from Different Sectors	2-3 Years Before			Present Situation			Change in Income %		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
Agriculture	68039.00	24966.00	52963	78175.00	38817.00	64399.00	15	55	22
	(67.81)	(34.17)	(58.33)	(65.52)	(36.67)	(56.19)			
Animal Husbandry	14033.46	11537.14	13159.75	18812.44	11534.29	16265.08	34.05	-0.02	23.60
	(13.99)	(15.79)	(14.49)	(15.77)	(10.90)	(14.19)			
Other Products of Animal Husb	1441.03	2180.95	1700.00	858.97	647.62	785.00	-40.39	-70.31	-53.82
	(1.44)	(2.99)	(1.87)	(0.72)	(0.61)	(0.68)			
Wages	2443.59	1805.95	2220.42	3628.21	2805.24	3340.17	48.48	55.33	50.43
	(2.44)	(2.47)	(2.45)	(3.04)	(2.65)	(2.91)			
Other eco. Activities	7292.31	27570.71	14389.75	9261.54	38010.48	19323.67	27.00	37.87	34.29
	(7.27)	(37.74)	(15.85)	(7.76)	(35.91)	(16.86)			
Other Sources	7094.87	5000.00	6361.67	8582.05	14047.62	10495.00	20.96	180.95	64.97
	(7.07)	(6.84)	(7.01)	(7.19)	(13.27)	(9.16)			
Avg. Per HH Income	100344.26	73060.76	90794.58	119318.21	105862.24	114607.92	19	45	26

#### (iv) Employment Generation among Wage Earners

Table 5.47 shows the number of individuals who worked as wage earners in agriculture and non-agricultural activities and the average number of days of employment received by them. The figures are for a few years earlier and the present scenario. As far as male agricultural labourers are concerned, the total number showed an increase of one labour but average number of days of employment declined. A decline is also seen among the average days of employment in the case of females working as agricultural labourers but their number remained the same. In non-agricultural activities only male labourers were found and there was a slight increase both in the number employed and in average days of employment (Table 5.47).

Table 5.47: Person days Employed by Labourers and Income

Details	2-3 Years Before			Present Situation		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Ag Labour Male</b>						
Number	3	0	3	4	0	4
Avg No of Days	127	0	127	120	0	120
<b>Ag Labour Female</b>						
Number	0	2	2	0	2	2
Avg No of Days	0	55	55	0	53	53
<b>Non Ag Labour Male</b>						
Number	9	4	13	10	5	15
Avg No of Days	106	105	106	125	98	116
<b>Total</b>						
Number	12	6	18	14	7	21
Avg No of Days	111	88	104	123	85	110

## (v) Marketing of Products

If we compare the pattern of marketing of the various products it is found that as far as agricultural commodities are concerned hardly any difference is found in the selling arrangement if we look at the share of produce sold in the village market, in Haats upto 3 kms and Haats beyond 3 kms. The cultivating households were selling roughly around 20 per cent in the local market and that has come down by only one percentage point. Among non-cultivating households the reverse is found with sale in local market going up by the same margin of one per cent. In the case of sale of animal husbandry products the sale is almost exclusively in the market within the village. But a small increase is observed in sale in Haats beyond 3 kms and this is at the cost of Haats located within 3 kms. The pattern is unchanged when we look at selling pattern of manufactured items (Table 5.48).

Table 5.48: Details regarding marketing of products (in Percentage)

Details	2-3 Years Before			Present Situation		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Agriculture produce</b>						
Within village	20.36	58.57	30.45	18.87	59.29	29.55
Nearest Haat (with in 3 kms)	36.28	12.86	30.09	39.59	12.14	32.34
Haat beyond 3 Kms	43.36	28.57	39.45	41.54	28.57	38.11
<b>Animal Husbandry Products</b>						
Within village	84.38	80	82.98	84.38	80	82.98
Nearest Haat (with in 3 kms)	6.25	6.67	6.38	3.13	6.67	4.26
Haat beyond 3 Kms	9.37	13.33	10.64	12.49	13.33	12.76
<b>Manufacturing</b>						
Within village	0	50	50	0	50	50
Nearest Haat (with in 3 kms)	0	50	50	0	50	50
Haat beyond 3 Kms	0	0	0	0	0	0

**(vi) Emergence of New Activities**

We enquired whether some new commercial activity had been initiated by the households surveyed by us during the last 2-3 years. Table 5.49 which provides the relevant details clearly highlights the fact that not much has happened in this area since in only 5 households did we receive a positive response. Two households were from among the cultivating group while the rest were from non-cultivating households. The activities started have been opening of shops selling requirements of daily use, tailoring shops and entering the transport business. It appears that the scope of opening new ventures is limited and it could also be constrained by lack of sufficient capital to invest or inadequate knowledge of a profitable venture which can be started and sustained successfully.

**Table 5.49: Details about new work Started by Members of Household 2-3 Years Before**

Details	Cultivating Households	Non Cultivating Households	Total
Yes	2 (5.13)	3 (14.29)	5 (8.33)
No	37 (94.87)	18 (85.71)	55 (91.67)
Total	39 (100.00)	21 (100.00)	60 (100.00)
<b>If Yes, Than of What Type</b>			
Shop	1 (50.00)	0 (0.00)	1 (20.00)
Transport	1 (50.00)	2 (66.67)	3 (60.00)
Tailor	0 (0.00)	1 (33.33)	1 (20.00)
Total	2 (100.00)	3 (100.00)	5 (100.00)

**(vii) Time Taken in Reaching the Nearby Markets and Frequency of Traveling**

Table 5.50 indicates the time taken from the village to the nearby Haats where people have to visit for selling their produce and for making their purchases. Since an all-weather road has not been constructed it follows that as soon as this facility is available the travel time will not only be reduced but the travel will also become comfortable.

**Table 5.50: Time in Transportation (in Minutes)**

Details	Present Situation
Cycle	32
Bullock cart	63
Dunlop Cart	42
Tempo	16
Tractor Trolley	35
Jeep	10
Small/Big Truck	20

Traveling becomes necessary for marketing, availing education and health facilities and for meeting social commitments or entertainment (Table 5.51). However, the frequency of travel is not very high as reflected in Table 5.52.

Table 5.51: Main Purpose for going out of village

Details	Cultivating Households	Non Cultivating Households	Total
Sale/Business	39 (100.00)	21 (100.00)	60 (100.00)
Purchasing	39 (100.00)	21 (100.00)	60 (100.00)
Education Purpose	39 (100.00)	20 (95.24)	59 (98.33)
Health Facility	39 (100.00)	21 (100.00)	60 (100.00)
Social Visits	32 (82.05)	18 (85.71)	50 (83.33)
Entertainment	11 (28.21)	8 (38.10)	19 (31.67)
Others	3 (7.69)	1 (4.76)	4 (6.67)
Total Households	39	21	60

Table 5.52: Average Frequency of Traveling

Details	Cultivating Households	Non Cultivating Households	Total
within 5km	3.15	2.67	2.98
5-10 km	4.37	4.38	4.37
above 10	2.39	2.71	2.51

#### (viii) Ownership of Assets among Households

Among the various assets owned by households agricultural implements have an important role because of the high dependence of this sector. If we compare the ownership of a few years earlier to the present some increase is witnessed. Same is the case with respect to vehicles. Among household assets the main increase is in ownership of mobiles (Table 5.53).

Table 5.53: Details about Assets (Average Number)

Details	2-3 Years Earlier			Present Situation		
	Cultivating Households	Non Cultivating Households	Total	Cultivating Households	Non Cultivating Households	Total
<b>Agricultural Implements</b>						
Plough	1.35	1.00	1.28	1.80	3.20	2.08
Bullock cart	0.95	1.00	0.96	1.00	1.00	1.00
Tractor	1.00	1.00	1.00	0.94	0.75	0.90
Chaff Cutter	1.00	1.00	1.00	1.00	1.00	1.00
Others	1.00	1.00	1.00	1.00	2.71	1.35

Table 5.53 (contd....)

<b>Transport</b>						
Cycle	1.14	1.00	1.09	1.53	1.06	1.37
Motorcycle/Scooter	0.91	0.50	0.78	1.18	0.90	1.09
Jeep	1.00	0.00	0.80	0.75	1.00	0.80
Others	0.00	1.00	1.00		1.00	1.00
<b>Non Ag Implements</b>						
Flour/Rice Mill	1.00	0.00	1.00	1.00	0.00	1.00
Sugarcane Expeller	0.00	1.00	1.00	0.00	1.00	1.00
Others	0.00	1.00	1.00	0.00	1.00	1.00
<b>Household Assets</b>						
Radio	1.00	1.00	1.00	1.04	1.00	1.03
TV	0.94	0.80	0.89	1.16	1.00	1.11
Telephone	1.00	0.50	0.70	1.00	1.00	1.00
Mobile	0.59	0.50	0.56	1.28	1.06	1.21
<b>Total</b>	<b>0.98</b>	<b>0.84</b>	<b>0.94</b>	<b>1.18</b>	<b>1.19</b>	<b>1.18</b>

## (ix) Problems arising because of Non-Availability of a Proper Road

The respondents attach a very high degree of importance to the all-weather road and this is proved by the fact that 95 per cent feel that it is important that their village should have proper road connectivity (Table 5.54).

Table 5.54: Details about the Importance of All Weather Road

Details	Cultivating Households	Non Cultivating Households	Total
Very Important	28	14	42
	(71.79)	(66.67)	(70.00)
Important	9	6	15
	(23.08)	(28.57)	(25.00)
Less Important	2	1	3
	(5.13)	(4.76)	(5.00)
Total	39	21	60
	(100.00)	(100.00)	(100.00)

The areas in which the all-weather road will prove beneficial to them is reflected in the difficulties which have been cited by them in the absence of this facility. They include problems of school going children, availing health facilities, in marketing and repair and maintenance of vehicles (Table 5.55). Separate tables have been made to highlight the problems particularly with respect to availing education facilities (Table 5.56) and health facilities (Table 5.57). They are quite confident that once the all-weather road is constructed to connect their village to a suitable place it will automatically result in improving the condition of the village and overall levels of living of the individuals.

Table 5.55: Details of Difficulties due to Non Availability of Road

Details	Cultivating Households	Non Cultivating Households	Total
Health Facility	32	12	44
	(82.05)	(57.14)	(73.33)
Education Facility	3	9	12
	(7.69)	(42.86)	(20.00)
Traveling	28	5	33
	(71.79)	(23.81)	(55.00)
Marketing	24	10	34
	(61.54)	(47.62)	(56.67)
Maintenance of Vehicles	18	10	28
	(46.15)	(47.62)	(46.67)
Not Getting Value of Ag Produce	5	4	9
	(12.82)	(19.05)	(15.00)
Total Households	39	21	60

Table 5.56: Problem of Educational Facility due to Non Availability of All Weather Road

Details	Cultivating Households	Non Cultivating Households	Total
Yes	33	17	50
	(84.62)	(80.95)	(83.33)
No	6	4	10
	(15.38)	(19.05)	(16.67)
Total	39	21	60
	(100.00)	(100.00)	(100.00)
<b>If Yes Than of what type</b>			
Problems in going to School	29	13	42
	(74.36)	(61.90)	(70.00)
Problems of teacher' regularity	12	7	19
	(30.77)	(33.33)	(31.67)
Availing higher education difficult	26	12	38
	(66.67)	(57.14)	(63.33)
Total Households	39	21	60

Table 5.57: Problem of Health Facility due to Non Availability of All Weather Road

Details	Cultivating Households	Non Cultivating Households	Total
Yes	35	17	52
	(89.74)	(80.95)	(86.67)
No	4	4	8
	(10.26)	(19.05)	(13.33)
Total	39	21	60
	(100.00)	(100.00)	(100.00)
<b>If yes, than of what type</b>			
Medical Facilities are not available within village	12	3	15
	(30.77)	(14.29)	(25.00)

Table 5.57 (contd....)

Asha/ANM not come regularly	26	12	38
	(66.67)	(57.14)	(63.33)
Reaching PHC	30	12	42
	(76.92)	(57.14)	(70.00)
Contacting private doctor	32	12	44
	(82.05)	(57.14)	(73.33)
Expense in cost of medicine	28	8	36
	(71.79)	(38.10)	(60.00)
Expense in cost of transport	2	0	2
	(5.13)	(0.00)	(3.33)
Total Households	39	21	60

#### D. MAIN POINTS ARISING OUT OF THE ANALYSIS

So far an analysis has been conducted of the field survey of the households from selected as well as the control villages.

To begin with it is important to point out that Meerut, by virtue of being an important sugarcane producing district has had the advantage of having roads in sugarcane growing areas even before the introduction of PMGSY scheme. Roads had been constructed by PWD or other agencies to facilitate movement of sugarcane from the cane growing area to the concerned sugar mills. We therefore find that even in our selected villages roads did exist but over the years they were not in good condition because of the absence of proper repair and maintenance. Thus in Meerut it is a case of upgradation of the roads which had been constructed earlier but were urgently in need of repair. The advantage which PMGSY brought with it was that upgradation was done in accordance with the norms which have been laid down. Consequently the quality of roads constructed was very good and subsequently wear and tear too was not very high as is reflected in the present condition of the roads.

For the purpose of our analysis we selected some roads which had been constructed between 2002-03 and others which were completed during 2004-05. The other aspect kept in mind was that the minimum length should be around 2 kms at least. This means that at the time of our survey some roads were round 6 years old while others 4-5 years old. Despite the fact that one can not expect very many changes to take place in such a short duration and that too when the income levels of the households are not very high, but even then sufficient indicators highlight the fact that a positive impact has already been made in our selected villages and this is duly being appreciated by the village community as well. Added to it is the fact that people who are residing in the control villages lament the fact that they are devoid of such a facility

and that even their village should be provided with all-weather road connectivity as soon as possible.

The Western region of the State has been the most developed region from the initial period itself and has a very strong agricultural base and both foodgrains as well as commercial crops are cultivated. Sugarcane and wheat are the most important crops, but others are also cultivated. Since agriculture is done on a commercial basis the land is fully irrigated and over the years after the construction of the road the use of inputs has registered an increase and this has had a positive impact on yield rates and consequently the marketable surplus has increased. Roads have further assisted in the transportation of the agricultural produce to distant Haats for sale and cultivators can receive better prices as well. This has been reflected in the increase in household incomes from agriculture. Improved mobility has also increased income from sale of milk and milk products and other products being manufactured in these villages.

The road has also made it easy for the wage earners to move out of their village and seek better employment opportunities. Thus the earning of the households by way of contribution of wage earnings has also gone up.

Greater mobility has had a direct impact even on the ownership of vehicles by individuals and in their frequency of visits outside the village for various purposes. The smooth road has made their journey not only more comfortable but has also eased the burden on their pockets by reducing the cost of repair and maintenance and on fuel consumption. Even the flow of traffic coming into and going out of our villages has gone up since the road has been constructed.

The impact of the road is also felt by people when it comes to the education of their children. The villages have a primary school located within the village itself but for education beyond the primary level they have to move out to locations which may be around 3 kilometres or even more. Now means of transportation like tempos and shared jeeps etc are more easily available. Moreover children can go more comfortably even on a cycle.

Equally important is the advantage provided by the road in availing medical facilities. In fact if we compare the period when a good road did not exist, the villagers found it extremely difficult to visit the PHC or other governmental hospital. The villages do not even have proper private clinics. As a result the sick had to be taken outside for getting any medical treatment. Not only has the road made their task convenient but even the frequency of visits of the ANM and other health workers have gone up over the years.

The survey conducted in the control villages clearly highlights the disadvantages which are faced by residents in the absence of a proper road. In our villages road connectivity is

required over a distance of around 2.5 kms while in the second it is around 3 kms. It is not that over the last few years the control villages have stagnated. In fact if we look at the income from different sources being earned by the households there is a reasonable increase. One of the advantages enjoyed by these villages is that agriculture is prosperous and to improve it further the use of inputs has been increased. Similarly, even from other sources their incomes have gone up. But it is being felt by the people that the gains could have been higher if their villages had a proper road. This is also evidenced in the fact that they attach a high significance to the road and are of the opinion that the road would facilitate in earning more, help in marketing of their produce as well as in availing medical and educational facilities.

Not only did we survey the respondents in our selected villages but we also held discussions in each village with a few influential persons. They too were satisfied with the quality of roads which are being constructed under PMGSY. They also expressed the view that the availability of the road has led to an all-round improvement in the villages in general and the living condition of villagers in particular.

The quality of construction being good has resulted in roads being in reasonably good condition in all villages but one. However, some repairs are required but one of the main shortcomings of the PMGSY scheme lies in the fact that repair and maintenance of roads remains a neglected aspect. The officials at the PIU did have their explanations which seem valid such as non-availability of sufficient number of class A contractors and other problems beyond their control. Therefore some rethinking is certainly desirable so that either means can be devised to put sufficient pressure on contractors or find an alternative method to ensure regular and timely repair and maintenance of the roads. This is desirable because the scheme on the whole is beneficial and will lead to overall development once all habitations are properly connected and the gains of proper mobility are enjoyed by one and all.

## Annexure 5.1: Distance Covered for Availing Different Facilities

## (a) Bhola

Facility	Before PMGSY			Type of Road	Present Situation		
	Distance	Walking / Cycle	Walking/Cycle & automated Vehicles		Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Within Village	√	--	Mixed	Within Village	√	--
Primary	Within Village	√	--	Mixed	Within Village	√	--
Upper Primary School	Within Village	√	--	Mixed	Within Village	√	--
High School/Inter College	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Health Sub Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
PHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
CHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	Above 5kms	--	√	Mixed	Above 5kms	--	√
Market	Above 5kms	--	√	Mixed	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Cooperative Societies	Above 5kms	--	√	Mixed	Above 5kms	--	√
Bank Branch	Within Village	--	√	Mixed	Within Village	--	√
Post Office	Within Village	--	√	Mixed	Within Village	--	√
Artificial	Above 5kms	--	√	Mixed	Above 5kms	--	√
PDS Shop	Within Village	--	√	Mixed	Within Village	--	√

## (b) Bhamauri

Facility	Before PMGSY			Type of Road	Present Situation		
	Distance	Walking / Cycle	Walking/Cycle & automated Vehicles		Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	--	√	Kuttchi	Within Village	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	Within Village	√	--	Kuttchi	Within Village	√	--
Health Sub Centre	Within Village	√	--	Kuttchi	Within Village	√	--
PHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Within Village	√	--	Kuttchi	Within Village	√	--
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	Within Village	√	--	Kuttchi	Above 5kms	--	√
Cooperative Societies	Within Village	√	--	Kuttchi	Above 5kms	--	√
Bank Branch	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Post Office	Within Village	√	--	Kuttchi	Within Village	√	--
Artificial	Above 5kms	--	√	Kuttchi	Within Village	√	--
PDS Shop	Within Village	√	--	Kuttchi	Within Village	√	--

## (c) Alamgiripur

Facility	Before PMGSY			Present Situation			
	Distance	Walking /Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Within Village	√	--	Kharanja	Within Village	√	--
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Within Village	√	--	Kharanja	Within Village	√	--
High School/Inter College	3-5 Kms	√	--	Kharanja	3-5 Kms	√	--
Health Sub Centre	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
PHC	Above 5kms	√	--	Kharanja	Above 5kms	--	√
CHC	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Family Planning Centre	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Aganwadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Market	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Cooperative Seed Centre	1 to 3 kms	√	--	Kharanja	1 to 3 kms	√	--
Cooperative Societies	Above 5kms	√	--	Kharanja	Above 5kms	--	√
Bank Branch	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Post Office	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Artificial	Above 5kms	√	--	Kharanja	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Less than 1 Kms	--	√

## (d) Meerpur

Facility	Before PMGSY			Present Situation			
	Distance	Walking /Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Within Village	√	--	Kharanja	Within Village	√	--
High School/Inter College	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Health Sub Centre	1 to 3 kms	√	--	Kharanja	1 to 3 kms	√	--
PHC	1 to 3 kms	√	--	Kharanja	1 to 3 kms	√	--
CHC	3-5 Kms	√	--	Kharanja	3-5 Kms	√	--
Family Planning Centre	3-5 Kms	√	--	Kharanja	3-5 Kms	√	--
Aganwadi Centre	Within Village	√	--	Kharanja	Within Village	--	√
Private Clinic	1 to 3 kms	√	--	Kharanja	1 to 3 kms	√	--
Market	3-5 Kms	√	--	Kharanja	3-5 Kms	√	--
Cooperative Seed Centre	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Cooperative Societies	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Bank Branch	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Post Office	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
Artificial	1 to 3 kms	√	--	Kharanja	1 to 3 kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## (e) Brahmpur Morana

Facility	Before PMGSY			Present Situation			
	Distance	Walking /Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3-5 Kms	--	√	Mixed	3-5 Kms	--	√
Primary	Within Village	√	--	Kuttchi	Within Village	√	--
Upper Primary School	Within Village	√	--	Kuttchi	Within Village	√	--
High School/Inter College	3-5 Kms	√	--	Kharanja	3-5 Kms	√	--
Health Sub Centre	Above 5kms	√	--	Kharanja	3-5 Kms	--	√
PHC	Above 5kms	√	--	Kuttchi	3-5 Kms	--	√
CHC	Above 5kms	--	√	Kharanja	Above 5kms	--	√
Family Planning Centre	Above 5kms	√	--	Kharanja	3-5 Kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	Within Village	√	--	Kuttchi	Within Village	√	--
Market	Above 5kms	--	√	Kharanja	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	--	√	Kharanja	Above 5kms	--	√
Cooperative Societies	Above 5kms	--	√	Kharanja	Above 5kms	--	√
Bank Branch	3-5 Kms	--	√	Kharanja	3-5 Kms	--	√
Post Office	Less than 1 Kms	√	--	Kharanja	Less than 1 Kms	√	--
Artificial	Above 5kms	--	√	Kharanja	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## (f) Manpuri

Facility	Before PMGSY			Present Situation			
	Distance	Walking /Cycle	Walking/Cycle & automated Vehicles	Type of Road	Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3-5 Kms	√	--	Kharanja	3-5 Kms	√	--
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Less than 1 Kms	√	--	Kharanja	Less than 1 Kms	--	√
High School/Inter College	3-5 Kms	√	--	Kharanja	Less than 1 Kms	--	√
Health Sub Centre	3-5 Kms	√	--	Kharanja	Less than 1 Kms	--	√
PHC	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
CHC	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Family Planning Centre	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Aganwadi Centre	3-5 Kms	√	--	Kharanja	Within Village	√	--
Private Clinic	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Market	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Cooperative Seed Centre	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Cooperative Societies	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Bank Branch	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Post Office	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
Artificial	3-5 Kms	√	--	Kharanja	3-5 Kms	--	√
PDS Shop	1 to 3 kms	√	--	Kharanja	3-5 Kms	--	√

## (g) Nagala Kaboolpur

Facility	Before PMGSY			Type of Road	Present Situation		
	Distance	Walking /Cycle	Walking/Cycle & automated Vehicles		Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	3-5 Kms	--	√	Kuttchi	3-5 Kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Within Village	√	--	Kharanja	Within Village	√	--
High School/Inter College	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Health Sub Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
PHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
CHC	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Market	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	--	√	Kuttchi	Above 5kms	--	√
Cooperative Societies	Above 5kms	--	√	Kharanja	Above 5kms	--	√
Bank Branch	Above 5kms	--	√	Kharanja	Above 5kms	--	√
Post Office	1 to 3 kms	--	√	Kharanja	Above 5kms	--	√
Artificial	Above 5kms	--	√	Kharanja	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## (h) Raidara

Facility	Before PMGSY			Type of Road	Present Situation		
	Distance	Walking /Cycle	Walking/Cycle & automated Vehicles		Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	Above 5kms	√	--	Mixed	Above 5kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Within Village	√	--	Kharanja	Within Village	√	--
High School/Inter College	Above 5kms	√	--	Mixed	Above 5kms	√	--
Health Sub Centre	Above 5kms	√	--	Mixed	Above 5kms	√	--
PHC	Above 5kms	√	--	Mixed	Above 5kms	√	--
CHC	Above 5kms	√	--	Mixed	Above 5kms	--	√
Family Planning Centre	Above 5kms	√	--	Mixed	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kharanja	Within Village	√	--
Private Clinic	Above 5kms	√	--	Mixed	Above 5kms	--	√
Market	Above 5kms	√	--	Kuttchi	Above 5kms	--	√
Cooperative Seed Centre	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Cooperative Societies	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Bank Branch	3-5 Kms	√	--	Kuttchi	3-5 Kms	--	√
Post Office	1 to 3 kms	√	--	Kuttchi	1 to 3 kms	--	√
Artificial	Above 5kms	√	--	Mixed	Above 5kms	--	√
PDS Shop	Within Village	√	--	Kharanja	Within Village	√	--

## Annexure 5.2: Distance of Various Facilities from the Village

## (a) Fitkari

Facility	Before PMGSY			Type of Road	Present Situation		
	Distance	Walking /Cycle	Walking/Cycle & automated Vehicles		Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Primary	Within Village	√	--	Mixed	Within Village	√	--
Upper Primary School	1 to 3 kms	√	--	Mixed	Within Village	√	--
High School/Inter College	1 to 3 kms	√	--	Mixed	1 to 3 kms	--	√
Health Sub Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
PHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
CHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Mixed	Within Village	√	--
Private Clinic	Above 5kms	--	√	Mixed	Above 5kms	--	√
Market	Above 5kms	--	√	Mixed	Above 5kms	--	√
Cooperative Seed Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Cooperative Societies	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Bank Branch	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Post Office	Within Village	√	--	Mixed	Within Village	--	√
Artificial	1 to 3 kms	--	√	Mixed	1 to 3 kms	√	--
PDS Shop	Above 5kms	--	√	Mixed	Above 5kms	--	√

## (b) Chindauri Tappa

Facility	Before PMGSY			Type of Road	Present Situation		
	Distance	Walking /Cycle	Walking/Cycle & automated Vehicles		Distance	Walking/ Cycle	Walking/Cycle & automated Vehicles
Bus station	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Primary	Within Village	√	--	Kharanja	Within Village	√	--
Upper Primary School	Within Village	√	--	Kharanja	Within Village	√	--
High School/Inter College	1 to 3 kms	√	--	Mixed	1 to 3 kms	--	√
Health Sub Centre	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
PHC	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
CHC	Above 5kms	--	√	Mixed	Above 5kms	--	√
Family Planning Centre	Above 5kms	--	√	Mixed	Above 5kms	--	√
Aganwadi Centre	Within Village	√	--	Kuttchi	Within Village	√	--
Private Clinic	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Market	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Cooperative Seed Centre	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Cooperative Societies	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Bank Branch	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Post Office	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
Artificial	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√
PDS Shop	1 to 3 kms	--	√	Mixed	1 to 3 kms	--	√

Annexure 5.3: Income from Milk and Milk Products Per HH

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
Total Production	1889	1165	1644	2169	1219	1848
Value of Total Production	20418	11602	17443	28629	17655	24925
Total Sale	1135	681	982	1359	787	1166
Total Value of Sale	11183	7285	9867	18562	11395	16143

Annexure 5.4: Income from other sale of Animal Husbandry (Rs)

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
Sale of Animal	3999	1604	3191	1860	442	1381
Total	3999	1604	3191	1860	442	1381

Annexure 5.5: Income from Other Economic Activities

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
Manufacturing	0	2400	748	0	4054	1263
Shop/Business	175	2716	953	448	4947	1815
Self employed	0	6790	2115	314	11577	3799
Job	3158	2584	2737	1631	3948	2227
Others	64	0	39	528	0	323
Total	3397	14490	6592	2922	24526	9427

Annexure 5.6: Average Income from Other sources (Rs)

Details	Before PMGSY			After PMGSY		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per HH</b>						
Interest	1057	0	700	1392	0	923
Rent	314	120	248	521	150	395
Money order	1581	200	1114	3437	1084	2638
Pension	2155	2630	2304	1965	3300	2402
Others	3267	584	2359	4839	763	3460
Total	8373	3534	6725	12155	5297	9818

Annexure 5.7: Income from Milk and Milk Products

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Average per Household</b>						
Total Production (Litres)	2221	1404	1935	2199	1533	1966
Value of total product (Rs)	24684	12643	20469	31090	17021	26166
Total Sale (Litres)	1284	940	1164	1264	1075	1198
Total Value of Sale (Rupees)	14033	11537	13160	18812	11534	16265

Annexure 5.8: Income from other sale of Animal Husbandry (Rs)

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per Household</b>						
Sale of Animal	1,441	2,181	1,700	859	648	785
Total	1,441	2,181	1,700	859	648	785

Annexure 5.9: Income from Other Economic Activities

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per HH</b>						
Manufacturing	-	393	138	-	3,763	1,317
Business	-	2,919	1,022	-	6,730	2,355
Self Employment	-	16,259	5,691	-	22,375	7,831
Job	7,292	8,000	7,540	9,262	5,143	7,820
Total	7,292	27,571	14,390	9,262	38,010	19,324

Annexure 5.10: Average Income from Other sources (Rs)

Details	2-3 Years Before			Present Situation		
	Cult HH	Non Cult HH	Total	Cult HH	Non Cult HH	Total
<b>Per HH</b>						
Interest	897	0	583	1154	0	750
Rent	462	0	300	615	0	400
Money Order	1859	1667	1792	2146	7905	4162
Pension	2369	0	1540	2769	3048	2867
Others	1508	3333	2147	1897	3095	2317
Total	7095	5000	6362	8582	14048	10495

## CHAPTER VI

# ISSUES IN IMPLEMENTATION OF PMGSY

As already indicated earlier, the PMGSY scheme was launched so that all unconnected habitations may be provided with an all-weather road. It is a scheme exclusively for rural areas and even in rural areas PMGSY covers only rural roads, i.e. roads which were formerly classified as Other District Roads (ODR) and village roads (VR). The scheme envisages only single road connectivity for a habitation.

Rural roads constructed under PMGSY have to be in accordance with provisions under Indian Roads Congress (IRC) specifications as given in Rural Roads Manual. Roads under PMGSY are constructed only after proper planning. The Manual for Preparation of District Rural Roads Plan and the Core Network lays down the various steps in the planning process and the role of different agencies such as Intermediate and District Panchayat as well as State Level Standing Committee. The plan is first prepared at the Block level. Once the Block level Master Plan is completed, the Core Network for the Block is identified. Once it is approved at the Panchayat level it is sent to the State level Agency as well as National Rural Roads Development Agency (NRRDA). Once this process is completed and found satisfactory then the Programme Implementation Units (PIUs) prepare a Detailed Project Report (DPR) for each road. The DPR is sent by the PIU to the State Technical Agency for scrutiny of design estimates. While preparing the design of a road under PMGSY a scientific technique is used. The soil is first of all tested to ascertain its property. The California Bearing Ratio is estimated and this partly determines the thickness of the road crust. The second aspect which affects thickness of the crust is the flow of traffic. For this flow of traffic is estimated prior to construction of the road. It is assumed that flow of traffic will increase per year. The traffic that would flow through the road is projected for a period of 10 years from the year of road construction. This too will determine the thickness of the road crust. Yet another aspect taken into consideration is the rainfall. The average road crust is 25 centimeters thick. However, it may be as thick as 35-40 centimeters depending on the results of the soil test and estimated flow of traffic.

Work of road construction is done on the basis of inviting tenders. Only class A and B registered contractors are eligible to submit tenders. To qualify as Class A contractor eligibility conditions have been laid down. According to them every contractor has to have a certified

number of road rollers of different weights, other machinery and equipment. He has to have a prescribed staff including a Civil Engineer who can supervise the work of construction. All projects are executed by the respective PIUs of a district and they have to be completed within a period of 9 months from the date of issue of a work order. The work order also has a built in clause for carrying out routine repair and maintenance for a period of five years by the contractor who was given the work order.

In order to ensure that the quality of roads constructed under PMGSY are of superior quality and as per specifications provided under the Manual strict supervision and monitoring is undertaken. For this there is a three-tier provision. The first-tier is the PIU itself whose primary responsibility is to ensure that all materials used as well as workmanship is in accordance to the prescribed norms. The State Quality Monitor (SQM) constitutes the second-tier. The SQM comprises of retired senior engineers of the State who had held the rank of at least Executive Engineer. They are expected to carry out routine inspections of the roads under construction and their reports are sent to SRRDA. Finally, the third-tier is the National Quality Monitor (NQM). This team consists of retired senior engineers but from other states so that their judgement and comments will be unbiased. They are also asked to carry out inspection of roads in order to ascertain whether construction work is being done as per specifications. Their reports are sent directly to NRRDA. In case the road is not being constructed satisfactorily the PIU concerned has to see to it that the concerned contractor replaces the materials or rectifies workmanship within the stipulated time so that quality of construction improves.

As far as the flow of funds is concerned, the SRRDA opens an account in a Public Sector Bank in the State Headquarters. This account number is communicated to NRRDA and Ministry of Rural Development. The Ministry then releases programme funds as well as administrative and travel expenses to this account. The State Government adds to it its own funds to meet works related expenses not found eligible for funding by the Ministry, meet cost escalation, tender premium and other programme expenses which are the responsibility of the State Government.

Outlined above is a brief note on the various aspects which have to be kept in mind in the construction of roads under PMGSY as outlined in the Manual for Preparation of District Roads.

The survey conducted by us and our discussions with the district level officials provided information about the extent to which all these guidelines are being followed and some of the difficulties faced by PIU officials in implementation of PMGSY.

As far as preparation of Plan and DPRs is concerned, the directives of the Manual are being duly followed. The various agencies such as Panchayat and State Level Agency are being consulted. Once the DPR is prepared it goes through the different stages of clearance and only then are they approved. Officials are not having much problem as far as release of funds is concerned and the data also reveals that the cost of construction is within the sanctioned amount thereby indicating that the criterion of cost effectiveness is being met. Our survey also reveals that in general the quality of road construction is of good quality over the districts covered by us during the survey.

However, there are some aspects in which PIU officials face problems and this leads to difficulty in proper implementation of PMGSY. One of the aspects is the time duration between preparation of a DPR and its final approval. There are various stages in the clearance of DPRs and so it becomes time consuming. But when a project clearance gets unduly delayed it has two effects. First of all it may result in price escalation and so cost of the project enhances. Secondly, it is sometimes found that because of the delay the construction work of a road approved under PMGSY is undertaken by some other agency. In such a situation the other agency undertaking the work does not necessarily follow all the strict rules during construction. Consequently the quality of the road constructed may not be of good quality. Moreover, funds sanctioned for this road under PMGSY are not utilized. The other aspect, which is very important, is the fact that the ideal time for painting of roads is summers when temperatures are highest, i.e. May and June. However, delays in approval of DPR and release of funds may act as a bottleneck. All projects approved have to be completed within a stipulated time and so the PIUs are under pressure to execute works on a timely basis as well as the targets have to be achieved. In such situations painting of roads is also done at times which are not best suited for this purpose and this adversely affects the quality of roads.

The PMGSY guidelines insist that only Class A/B Contractors should be approved and given work orders. Class A/B contractors have to have a certified number of road rollers and other equipment as well as staff. The experience of officials is that the regular class A/B contractors are not very keen on taking up works under PMGSY. This is primarily so because such contractors have very high overheads and to maintain their staff and equipment it is beneficial only when they get big contracts such as construction of National or State Highways. In such cases roads to be constructed are lengthy and their staff and equipment is optimally utilized. The PMGSY roads on the other hand, are not very lengthy. In the four districts surveyed by us it was found that many roads were even below 1 km in length. Only in Jhansi we found lengthier roads and surveyed one road which was around 8 kms. On an average the

roads being constructed under PMGSY are between 2-3 kilometers. The cost of construction of these roads is determined by soil conditions and traffic flow estimates. But generally costs are around 50-60 lakhs. This amount is far too small to attract the really good Class A/B contractors.

In the absence of such Class A/B Contractors, the others who are in the fray for obtaining work orders are those who do not necessarily have all the equipment and machinery nor adequate staff but to prove their eligibility they temporarily borrow equipment from other sources. Rae Bareilly is a district where PIU officials face such problems in particular. A few years earlier the district had a reasonable number of Class A/B Contractors and then it was easy for officials to get work started on a number of roads simultaneously. Unfortunately one lengthy road was constructed in the district involving many contractors. The road constructed was of very poor quality and all contractors got blacklisted. Since then the strength of approved these Contractors has depleted. To make matters worse some of these contractors have political connections. This makes it extremely difficult for PIU officials to supervise their work strictly and at times officials are left helpless. In Jhansi it was reported that although a work order was given to a regular Class A/B Contractor, he sublet the same to someone else. With problems of such nature the quality of construction is not of the desired quality.

Another problem which is associated with such contractors is that the routine repair and maintenance contract for five years after road construction has remained a neglected aspect. These contractors move out of the site once road has been constructed and take up another work order either under PMGSY or elsewhere. In such a situation they are not carrying out the routine repair and maintenance work. One factor responsible for such reluctance is also that the amounts sanctioned under repair are not adequate and the contractor finds it uneconomical to move in with their staff and equipment to carry out repair work.

When a PMGSY road passes through a habitation then this part of the road is not metalled. Instead the portion is made of cut stone. There are instances where the cut stone work undertaken was of poor quality and the stretch is so uneven that it is difficult even to walk on it let alone ride a cycle or any other vehicle.

There are times when political pressure is exerted on PIU officials to construct roads under PMGSY according to their preference rather than on the basis of the priority list prepared by the officials. Although every effort is made to avoid construction of such roads but occasionally officials have to yield to pressures.

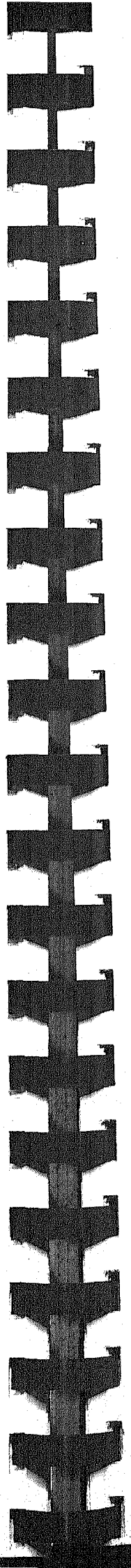
The PMGSY clearly indicates that the road constructed under PMGSY will have to be in approval with the local community and that if the proposed road cuts into the fields of any

individual he will voluntarily donate the piece of land and no compensation whatsoever shall be paid. This provision too poses problems at times although people generally do not object. The problem comes more from influential persons whose land comes under acquisition. They make every effort and try to avoid their land being acquired. In some cases they have actually succeeded as well and in doing so the road which could have been straight had to be curved.

Not only is the consent of individuals required in the clearance of a road but the officials have also to obtain NOC from some departments such as the forest department. At times the NOC is not issued and projects duly approved under PMGSY have to be shelved. In fact one of the control villages visited by us was genuinely in need of a road as it was very backward and an all-weather road could have led to improvement in the condition of the village and its people. It is one of the villages where the PMGSY road is also proposed. However, the forest department has not been sanctioning the NOC and the villagers continue to suffer.

Although the roads which are constructed under PMGSY are following the strict norms laid down in the Manual but what is happening that the either side of the road is all mud. In fact the road could be passing through the side of a cultivator's field. What happens under such conditions is that because of weather conditions such as high speed winds and during monsoons the muddy part along the metal road is blown away or washed away. The road then starts getting damaged along the sides. This accelerates the wear and tear of the roads even if they were of good quality. Presently there is no provision to control this problem and one of the suggestions which emerged during our survey was that if brick soling could be done on both sides at the time of construction itself it would provide the much needed support to the metal road.

Finally, keeping in mind the work load of PIU officials, the funds provided for traveling etc. are inadequate. Moreover officials have to regularly carry out routine inspections not only during the period when construction work is in progress but even later to check for repair and maintenance. PIUs normally have one vehicle and that is usually at the disposal of the PIU incharge. The districts are big in size and if proper supervision is to be conducted through regular visits all over the district, the PIU genuinely needs to be provided with another vehicle.



## CHAPTER VII

# ECONOMIC ANALYSIS OF RURAL ROADS UNDER PMGSY

### Introduction

Construction of rural roads generates a number of economic and social benefits some of which are measurable, while others are not easy to quantify. The economic benefits are in terms of increased productivity of existing activities, income from new activities, better prices of output, saving in travel cost and time. The social benefits are in terms of increased communication, better access to health and education facilities and improvement in health and education standard, better awareness, etc.

In this chapter we have carried out the economic analysis of the rural roads surveyed for the study. The analysis has been done in terms of the Internal Rate of Return (IRR) for four districts covered in the study viz. Rae Bareli, Meerut, Gorakhpur and Jhansi. To calculate the IRR three types of benefit from the construction of rural roads have been taken into account:

- i. Agricultural Benefits (B1);
- ii. Vehicle Operating Costs (VOC) Savings (B2); and
- iii. Savings in Travel time (B3)

The analysis is based on the primary data collected during the field survey conducted by our research team in the four selected districts of Uttar Pradesh. Information was collected on traffic flow of different types of vehicles on all the eight roads constructed under PMGSY in each of the district selected for our study. For agricultural benefits field survey was carried out in each district for collecting the data of agricultural output and income in the pre and post road construction period as well as in the sample and the control villages.

### Methodology of Calculating IRR

Following steps were involved in estimation of net benefit stream of rural roads.

### **(A) Agricultural Benefits (B1)**

The principal monetary benefit of a rural road project in U.P., which is predominantly an agrarian economy, is the increased agriculture production and additional income from sale of agricultural produce. Before a road is built, the farmers have limited access to take their produce to the market. With a new road access to market is provided and the cost of transporting the produce to the market and cost of transporting agricultural inputs to the village come down, making it more attractive for the farmer to produce more for sale. The farmer thus enjoys a 'producers' surplus'. Thus, the gain is in terms of higher output, increased marketed surplus, reduced prices of inputs and better prices from sale.

Following steps have been adopted to calculate the agricultural benefits:

- Per household income from agricultural surplus has been taken into account for two situations, i.e., for connected villages and for unconnected/control villages.
- In both connected and unconnected villages before road and after road situation was taken into account.
- For income change within selected and control villages, we took the difference in before and after project situation.
- The difference in the net gain in income in sample households over net income gain in households in control villages is taken as a measure of net incremental benefit from roads.
- To arrive at total incremental benefit we multiply net incremental gain per household with the number of agricultural households in the village.
- It is assumed that 50% of benefit is realized in the first year after the construction of road, 80% benefit is realized in the second year and full benefit is realized from 3<sup>rd</sup> year onwards.

### **(B) Vehicle Operating Cost Savings (B2)**

Improved quality of road leads to reduction in the operation cost of vehicle including saving in diesel/petrol consumption, less wear and tear and lower maintenance costs. The following steps are involved in estimation of net benefit stream of rural roads per kms. :

- Since the survey was conducted in the year 2008, we derived the traffic flow for earlier years by reducing traffic flow by 7% each year for different types of vehicles. This gives

us the profile of traffic flow by types of vehicles for the base year in which road was constructed.

- Base year traffic flow has been projected for later years on the basis of the following assumptions. Non-motorized traffic consisting of carts, cycles/rickshaw/pedal trawly is assumed to decline by 7 percent annually. On the other hand, 7 percent annual compound growth rate has been assumed for motorized traffic including bus/truck/car/jeep/three wheelers and two wheelers till the twentieth year. The assumption is based on the unit elasticity of traffic with respect to growth of state domestic product, which is expected to rise at an annual rate of 7%. On existing roads it has been assumed that traffic will grow at the compound annual growth rate of 2 percent.
- Per km operating costs for different types of vehicles have been taken from the Kadiyali report, which has used updated costs for 2003 on Indian Road Congress (IRC) estimates for 1993. Total operation cost of different types of vehicles is estimated by multiplying the numbers of estimated vehicle flow with per km cost of that type of vehicle. By adding operation costs of different types of vehicles we arrive at total operation cost per km per day. Total annual operation costs are then estimated by multiplying per day cost by 365.
- It is assumed that operation cost corresponds to PCI 1 (Present Condition Index), reflecting poor quality road in case of existing roads. Operation costs of improved project roads are taken corresponding to PCI 4 (good condition roads). Annual adjustment in operation costs has been made to reflect deteriorating quality of road till its major renewal in tenth year.
- Total annual savings of vehicle operation costs for all vehicles is estimated by taking the difference in the estimated costs per km for existing roads and project roads. This yields a stream of VOC benefits over 20 year period.
- For maintenance costs norms of Rs. 25,000 per km per year has been taken for project roads, which is assumed to increase by 5 percent up to 10<sup>th</sup> year. The norm for existing roads has been taken at Rs. 10000 per km per year and is assumed to remain constant over time. It has been further assumed that rehabilitation of roads will be undertaken in the 10<sup>th</sup> year. Cost of rehabilitation has been taken as 25 percent of the construction costs.

- Net VOC benefit stream per km for rural roads has been arrived at by deducting the costs from the net benefit stream on account of VOC. For benefit for the full length of road, it is multiplied by the total length of the road.

### **Savings in Travel Time (B3)**

The third type of benefit from a road project consists of reduction in travel time, which is valued by the commuters. Any transport project that saves time produces important and measurable benefits. Following steps have been adopted to calculate savings in time:

- Information on average number of trips per month was collected from the surveyed households.
- To get the total number of trips, number of trips was multiplied by the number of total households. To get the number of trips made annually this was multiplied by 12.
- It is further assumed that only 50 percent of trips are made for economic purposes, rests of them are for recreation or other non-economic activities.
- The number of estimated trips made for economic purposes were multiplied by the reported saving in travel time per trip to get the total time saved.
- For rural road projects, the value of time can most appropriately be based on the minimum wage rates prevalent in the area. For instance, the minimum wage rate was found to vary from Rs. 60 to Rs. 100 per day for 8 hours. Therefore, a value of time saving of Rs. 9 per hour was taken for economic analysis.
- Total saving in travel time in hours for economic purposes was multiplied by Rs. 9 (the value of time saved) to get the total benefits due to saving in travel time.

### **Cost of Construction and Repair**

Cost consists of construction cost and maintenance cost. Construction cost per km. has been taken from the project data on actual basis. As explained above for maintenance costs norm of Rs. 25,000 per km per year has been taken for project roads, which is assumed to increase by 5 percent up to 10<sup>th</sup> year. The norm for existing roads has been taken at Rs. 10,000 per km per year and is assumed to remain constant over time. It has been further assumed that rehabilitation of roads will be undertaken in the 10<sup>th</sup> year. Cost of rehabilitation has been taken as 25 percent of the construction costs.

### Net Incremental Benefits

Net incremental benefits have been derived by deducting construction and maintenance costs from the estimated benefits. An annual stream of net benefits has been prepared for 20 years. No account has been taken of the left over value of the asset created. It may be noted that both benefits and costs have been estimated at domestic market prices and no adjustment has been made for border prices. IRR has been calculated using SPSS. It represents that rate of discount which reduces the net present value of the benefit stream to zero.

### Results

The values of IRR for village roads in the selected districts are given in Table 6.1. The IRR varied from a low of 5.0% in Jhansi district to as high as 60.23% in Meerut district. IRR averaged 12.21% in Rae Bareli and 8.97%, in Gorakhpur. The lower IRR values in Rae Bareli, Gorakhpur and Jhansi are due to low traffic flow on project roads, low agricultural surplus and low savings in time. On the other hand, the IRR is very high in Meerut, which is a developed agricultural district with high volume of mechanized travel and higher agricultural surplus.

Looking at the different type of benefits we find that agricultural benefits (B1) constitute the dominant part of benefits. Roughly half of the total benefit in Meerut and Rae Bareli and about one-third of benefits in Gorakhpur were contributed by agricultural benefits (Table 6.1). In Jhansi district which is a dry district agricultural benefits were too small. In some cases the benefits were so low that the IRR value could not be determined. In Meerut district where mechanized traffic flow was much larger VOC savings contributed about one-third of total benefits. IRR could not be calculated for VOC and VOT benefits in case of the other three districts, though total benefits gave a positive but small IRR. Thus, our analysis suggests that the economic impact of rural roads depends upon the level of development in the area where the road is constructed.

**Table 6.1: IRR of Rural Roads In Selected Districts**

District	Region	Agriculture Benefits (B1)	VOC Savings (B2)	VOT Savings (B3)	Total Benefits (B1+B2+B3)
Jhansi	Bundelkhand	-	-	-	5.00%
Gorakhpur	Eastern	2.40%	-	-	8.97%
Rae Bareli	Central	6.18%	-	-	12.21%
Meerut	Western	32.02%	19.00%	2.55%	60.23%

Note: "-" shows that IRR cannot be determined

The estimated values of IRR for different types of benefits in the different roads surveyed in the four districts are given in the following tables.

**Table 6.2: IRR of Rural Roads In Rae Bareli District (in %)**

Village	Road	Agriculture Benefits (B1)	VOC Savings (B2)	VOT Savings (B3)	Total Benefits (B1+B2+B3)
Gohanna	R - 1	7.13	-	-6.39	11.98
Kotwa Madaniya	R - 2	6.51	-	-	10.22
Devpuri	R - 3	14.18	-	-2.32	20.44
Pilkha	R - 4	10.06	-1.85	-	18.07
Jagdishpur	R - 5	-0.05	3	-	11.65
Pastaur	R - 6	3.29	-	-	8.73
Tera	R - 7	6.62	-	-	9.58
Sabzi	R - 8	4.42	-	-	10.57
<b>Rae Bareli</b>		<b>6.18%</b>	-	-	<b>12.21%</b>

Note: "-" shows that IRR cannot be determined

**Table 6.3: IRR of Rural Roads In Gorakhpur District (in %)**

Village	Road	Agriculture Benefits (B1)	VOC Savings (B2)	VOT Savings (B3)	Total Benefits (B1+B2+B3)
Chabella	G - 1	15.94	-	-	20.78
Bhaksa	G - 2	4.58	-4.2	-	11.93
Pakadiyar	G - 3	-1.37	-	-	3.12
Sihata Mudera	G - 4	14.48	-	-	18.76
Gadiana	G - 5	-	-	-	0.18
Behusa	G - 6	-0.64	2	-	10.4
Sihorwa	G - 7	3.11	-	-	9.13
Lonia	G - 8	-	-	-	1.12
<b>Gorakhpur</b>		<b>2.40%</b>	-	-	<b>8.97%</b>

Note: "-" IRR cannot be determined

**Table 6.4: IRR of Rural Roads In Jhansi District (in %)**

Village	Road	Agriculture Benefits (B1)	VOC Savings (B2)	VOT Savings (B3)	Total Benefits (B1+B2+B3)
Tilautha	J - 1	-	-	-	-0.94
Bachauni	J - 2	-2.72	-	-	3.49
Koltora	J - 3	-	5	-	10.53
Shahpura	J - 4	-	-2	-	6.02
Gorpura	J - 5	2.3	-	-	7.59
Ghanghori	J - 6	-	-3	-	0.46
Punauli	J - 7	-	-	-	-1.46
Dimrauni	J - 8	-3	-	-	1.63
<b>Jhansi</b>		-	-	-	<b>5.00%</b>

Note: "-" IRR cannot be determined

Table 6.5: IRR of Rural Roads In Jhansi District (in %)

Village	Road	Agriculture Benefits (B1)	VOC Savings (B2)	VOT Savings (B3)	Total Benefits (B1+B2+B3)
Bhola	M - 1	28.26	0.26	4.42	39.02
Alamgiripur	M - 2	13.12	21.07	-	35.75
Bhamauri	M - 3	59.77	29.46	10.41	88.52
Meerpur	M - 4	24.88	19.11	0.89	46.22
Brahmpur	M - 5	5.02	10.28	-	21.92
Manpuri	M - 6	76.43	7.54	15.66	99.05
Nagla kaboolpur	M - 7	23.13	43.7	0.15	68.75
Raidara	M - 8	16.31	23.89	-3.72	43.77
Meerut		<b>32.02%</b>	<b>19.00%</b>	<b>2.55%</b>	<b>60.23%</b>

Note: "-" IRR cannot be determined

Annexure 6.1: Table on Traffic Flow and Net Gain in Income

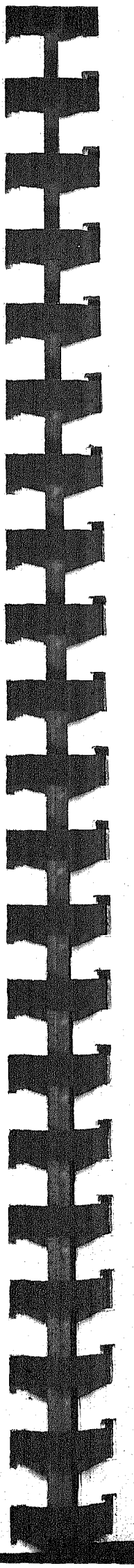
Rae Bareli	Bullock/ Dunlop Cart	Cycle /Rickshaw /Trolley	Bus	Truck	Tractor	Car/Jeep etc.	Two Wheelers
Gohanna	13	235	0	0	2	3	50
Kotwa Madaniya	17	163	0	0	0	0	13
Devpuri	3	373	12	0	0	25	42
Pilkha	22	412	0	0	34	4	83
Jagdishpur	25	354	0	17	10	51	115
Pastaur	9	260	0	2	2	5	106
Tera	7	82	0	0	0	2	20
Sabzi	8	246	0	2	2	6	112
<b>Gorakhpur</b>							
Chabella	13	217	0	5	19	2	53
Bhaksa	48	332	0	0	25	8	115
Pakadiyar	0	236	0	0	20	5	78
Sihata Mudera	0	230	0	0	9	25	42
Gadiana	23	310	0	0	24	5	79
Behusa	37	387	0	9	17	38	158
Sihorwa	19	310	0	0	0	12	144
Lonia	23	280	0	0	9	9	103
<b>Jhansi</b>							
Tilautha	8	56	0	0	8	11	39
Bachauni	5	145	0	0	19	11	34
Koltora	30	194	0	0	21	38	82
Shahpura	25	225	0	0	15	21	50
Gorpura	23	35	0	0	14	9	21
Ghanghori	44	67	0	0	22	3	38
Punauli	11	128	0	0	5	11	27
Dimrauni	7	150	0	0	29	13	112
<b>Meerut</b>							
Bhola	64	145	0	0	12	11	62
Alamgiripur	8	241	0	0	87	134	87
Bhamauri	186	368	0	0	28	71	162
Meerpur	56	289	0	10	19	66	234
Brahmpur	70	346	3	9	7	31	101
Manpuri	103	148	3	0	7	5	27
Nagla kaboolpur	239	464	0	7	65	38	60
Raidara	153	204	9	10	16	22	85

Source: Field Survey

Annexure 6.2: Traffic Cost Per Km in Project Area (Rs.)

Year	Bullock/ Dunlop Cart	Cycle/ Rickshaw/ Trolley	Bus	Truck	Tractor	Car/Jeep etc.	Two Wheelers
1	23	0.3	8.47	8.44	8.64	3.86	0.96
2	23	0.3	8.89	8.86	9.07	4.05	1.01
3	23	0.3	9.34	9.31	9.53	4.26	1.06
4	23	0.3	9.81	9.77	10.00	4.47	1.11
5	23	0.3	10.30	10.26	10.50	4.69	1.17
6	23	0.3	10.81	10.77	11.03	4.93	1.23
7	23	0.3	11.35	11.31	11.58	5.17	1.29
8	23	0.3	11.92	11.88	12.16	5.43	1.35
9	23	0.3	12.51	12.47	12.77	5.70	1.42
10	23	0.3	13.14	13.09	13.40	5.99	1.49
11	23	0.3	8.47	8.44	8.64	3.86	0.96
12	23	0.3	8.89	8.86	9.07	4.05	1.01
13	23	0.3	9.34	9.31	9.53	4.26	1.06
14	23	0.3	9.81	9.77	10.00	4.47	1.11
15	23	0.3	10.30	10.26	10.50	4.69	1.17
16	23	0.3	10.81	10.77	11.03	4.93	1.23
17	23	0.3	11.35	11.31	11.58	5.17	1.29
18	23	0.3	11.92	11.88	12.16	5.43	1.35
19	23	0.3	12.51	12.47	12.77	5.70	1.42
20	23	0.3	13.14	13.09	13.40	5.99	1.49

Note: Indian Road Congress data updated by Kadiyali and Associates



Annexure 6.3: Traffic Cost Per Km. for Existing Roads (Rs.)

Year	Bullock/ Dunlop Cart	Cycle/ Rickshaw/ Trolley	Bus	Truck	Tractor	Car/Jeep etc.	Two Wheelers
1	29	0.3	10.34	10.18	10.08	6.49	1.71
2	29	0.3	10.86	10.69	10.58	6.81	1.80
3	29	0.3	11.40	11.22	11.11	7.16	1.89
4	29	0.3	11.97	11.78	11.67	7.51	1.98
5	29	0.3	12.57	12.37	12.25	7.89	2.08
6	29	0.3	13.20	12.99	12.86	8.28	2.18
7	29	0.3	13.86	13.64	13.51	8.70	2.29
8	29	0.3	14.55	14.32	14.18	9.13	2.41
9	29	0.3	15.28	15.04	14.89	9.59	2.53
10	29	0.3	16.04	15.79	15.64	10.07	2.65
11	29	0.3	10.34	10.18	10.08	6.49	1.71
12	29	0.3	10.86	10.69	10.58	6.81	1.80
13	29	0.3	11.40	11.22	11.11	7.16	1.89
14	29	0.3	11.97	11.78	11.67	7.51	1.98
15	29	0.3	12.57	12.37	12.25	7.89	2.08
16	29	0.3	13.20	12.99	12.86	8.28	2.18
17	29	0.3	13.86	13.64	13.51	8.70	2.29
18	29	0.3	14.55	14.32	14.18	9.13	2.41
19	29	0.3	15.28	15.04	14.89	9.59	2.53
20	29	0.3	16.04	15.79	15.64	10.07	2.65

Source: Indian Road Congress data updated by Kadiyali and Associates, *Study of Social and Economic Impact of Rural Roads*, sponsored by Diversified Agriculture Support Project, Government of U.P., December 2003.

## CHAPTER VIII

### SUMMARY AND CONCLUSIONS

The Pradhan Mantri Gram Sadak Yojana (PMGSY) has been in operation since 2000 and the main purpose of the scheme was to provide all-weather road access to all unconnected habitations. During the First Phase habitations with population of 1000 or above were to be covered while in the Second Phase connectivity was to be ensured to habitations having population between 500-999. Then in the Third Phase the task of upgradation of through routes was to be undertaken. Later the priorities were revised and the task of upgradation of through routes was to be taken up earlier instead of providing connectivity to habitations with population of above 500 but below 1000.

The PMGSY scheme envisages the construction of high quality roads. For achieving this objective a manual was prepared laying down the norms and conditions which have to be fulfilled. For instance, once a habitation is selected for construction of road under PMGSY proper soil tests are to be conducted and along with it some idea of the traffic expected to flow over the next ten years was to be estimated. Both these factors would help, determine the thickness of the road crust so that it could bear the burden of traffic over the next 10 years.

Road construction is done by Class A/B registered Contractors on the basis of submitted tenders. The eligibility criteria for qualifying as a Class A/B Contractor have been properly laid down and the PMGSY officials at the district level have to follow these rules. After the contract for construction of the road is issued there are provisions to ensure proper monitoring and supervision of roads during construction. For this a three-tier provision has been made. The contract also has a built-in clause which demands that each contractor will carry out routine maintenance of roads constructed by him for a period of 5 years.

In Uttar Pradesh commendable work has been achieved under the PMGSY scheme. If we look at the cumulative figure of the progress of work done under the scheme it is found that upto 31 March 2009 the total completed works including upgradation worked out to 12341 and road length covered was 26160.51 kms. The cost involved in doing this work was Rs.5,45,375 lakh. These figures indicate the magnitude of work which has been achieved by the Uttar Pradesh Rural Road Development agency (UPRRDA) in a short span of 7-8 years.

The UPRRDA wanted to assess the impact that has been felt on the village/habitations which have received connectivity through roads constructed under PMGSY and the task was

entrusted to the Giri Institute of Development Studies, Lucknow. We conducted the study with some key objectives in mind which included whether or not roads were constructed properly in accordance with the guidelines. Whether the concerned agencies were duly consulted in the planning process and whether proper supervision and monitoring was done while roads were under construction and also whether regular repair and maintenance is being carried out as per the contract. The impact was to be viewed in terms of increased agricultural production and overall income levels of households and in improvement in various facilities such as education, health, banking, etc.

The study is based on primary survey of four districts of Uttar Pradesh. Districts were selected with the help of officials of the UPRRDA and represent each region of the State. Then from each district 8 villages/habitations were selected where roads under PMGSY have been constructed. Moreover two control villages were also selected from each district which does not have an all-weather road so as to compare the condition of these villages with our selected villages. Then from each village a total of 30 households were selected for detailed survey conducted with the help of specifically designed questionnaires. In all, therefore, 40 villages and 1200 households were surveyed by us and our analysis is based on this survey.

## MAIN FINDINGS

For the sake of providing district-wise details we have given a separate chapter to each district surveyed by us where data pertaining to that district has been analysed. Here we shall be providing the highlights of the points which have emerged. It is observed that most of the findings are common to all the districts because more or less the impact has been similar. Moreover some of the problems related to various aspects of road construction too are common between the districts. Thus the highlights of the findings are being presented together.

Not only has the UPRRDA done a highly commendable work in providing all-weather road connectivity to over 11 thousand habitations in a short period of time by constructing almost 23 thousand kilometres of roads under PMGSY but the gains of this connectivity are also being felt on the condition of the villages as well as the households living in them. However, before we actually get down to the task of pointing out the positive impact we must bear in mind that not much time has elapsed since these roads have been constructed. Consequently, one should not expect very spectacular changes to take place in such a short time. However, what is quite evident is that a positive impact has been certainly felt and this has duly been appreciated by the people of the villages.

Since the PMGSY scheme is for rural roads only and the economy of our villages are highly dependent on agriculture, the agricultural sector has been a beneficiary of the all-weather roads. As compared to years prior to availability of a road the cultivators are now putting more of agricultural inputs in terms of chemical fertilizers, pesticides and better quality seeds. It is therefore observed that on the whole this has had an impact on the productivity of the crops resulting in higher production and higher marketable surplus. Consequently people are earning higher incomes from sale of agricultural produce. Higher incomes are also being received because it has become convenient for cultivators to sell their produce in Haats which are outside the market. However, one must bear in mind that to some extent increased incomes should not entirely be credited to increased production alone. Even price escalation has been one factor to have contributed towards this gain. While agricultural performance has gone up not much impact has as yet been made on the cropping pattern which has remained similar over the years in all our selected districts.

Jhansi has been one exception in our analysis because the district has been confronted with drought conditions over the past 3-4 years. This has resulted in reduction in use of inputs and also partly on the productivity. But being a natural calamity one can presume on the evidence of information from the other districts that once normalcy returns, even Jhansi will register better performance in the years to come.

The increased mobility among people because of the road has facilitated the movement of wage earners. It is not that the numbers have increased very much since road construction but those working as non-agricultural wage earners are working over longer periods of time as is reflected in their average days of employment and this has meant higher wage earnings for the households. In fact income of the households from other activities such as sale of milk and milk products and other economic activities such as manufacturing has also increased since the time road under PMGSY was constructed. The increase in household income has ranged from around 20-30 per cent among the households of our selected districts. We may, therefore, say that one of the factors which have enabled households to earn higher incomes is the availability of an all weather road.

So long as these villages did not have a proper road, people did keep their own vehicles so that they could go out for various purposes. However, the journey was rather cumbersome particularly during monsoon season and also because roads were bumpy and uneven. Consequently the speed of travel was adversely affected on the one hand and the vehicles were subjected to a much higher wear and tear. The life of tyres was short and needed replacement more frequently. Similarly even the expenditure on fuel was higher. A proper metal road has

added a new dimension in this field. More people are now in possession of vehicles particularly cycles and scooters/motor cycles. To some extent even the number of cars and jeeps has increased as also as the number of tractors. Since these are expensive, the increase is marginal because only a selected few in the village can afford them. The flow of traffic in these villages has increased over the years by about 15-30 per cent across the four districts. New means of conveyance such as shared jeeps and tempos etc are now available and even those not owning a vehicle can conveniently go out of town. Consequently the frequency of visits for purchase or sale, education or medical need and social ceremonies or entertainment has shown an increasing trend. A relatively higher proportion of sale is being done in Haats outside the village whereas earlier lack of proper road led to the domestic market being more convenient for sale of goods produced by households. Last but not least the expenditure on repair and maintenance of vehicles as well as fuel has been reduced by around 8-10 per cent.

The influential persons, with whom we held discussions, included Panchayat members as well. In all the four districts they confirmed that they were consulted in planning process and that their priorities were taken into consideration. In fact, there are instances where road length was increased in order to connect it to the primary school within the village.

While these are some of the impacts which can be felt as well as measured there are some indirect ways through which people have been benefited after the road under PMGSY was constructed in their villages. The most significant aspect has been in availment of medical facilities. In fact, the road has come as a boon to the people since movement of sick from the village to the nearest PHC, CHC or any other government hospital as well as to a private clinic is now easier. Earlier transporting the sick was extremely painful for particularly those patients who were seriously ill. Problem of getting medical attention was particularly troublesome when medical treatment was required at night.

The other significant impact has been on access to educational facilities. Our villages normally have a primary school located within the village itself. But for education beyond Class V children have to go out and the schools/colleges may be within 3-5 kms or even further in case of some villages. Now that the road has brought with it facilities of conveyance such as shared taxis/tempos etc and also that parents can purchase cycles for their school going children the enrolment in higher classes has improved. Even if we look at the primary schools within the village one finds an improvement in the attendance of not only children but even the teachers who do not reside within the village. Higher educational attainment will enhance their productivity levels and some have even been going in for technical education in ITIs etc and this will definitely result in better employment opportunities.

In this way the impact of the road can be seen in the overall betterment in the living conditions of the village community. Increased incomes have made it possible for the households to afford more assets of various types, such as agricultural implements, vehicles and household durables. However, it is as yet early to see too much change by way of increased commercial activity within these villages since road construction or even in increase of government facilities in terms of say banking services, bus station or introduction of a bus route, and initiation of health services within these villages. But then one must realize that not much time has lapsed. Moreover the introduction of new commercial activity depends on various factors such as increased demand, sufficient funds for investment, knowledge of the market and entrepreneurial ability. Public services are provided on the basis of prescribed norms. An upper primary school is opened once a specified number of students are available and a PHC is sanctioned only when the laid down population norm is fulfilled. Similarly a location is granted a bus station or a bank branch etc. Even private health services come to villages only when the doctor is fully confident of earning a sufficient amount after setting up his clinic.

However, it can be said beyond doubt that the advent of the road has ushered in new possibilities of development and some of these benefits can actually be visualized and that the construction of an all-weather road has certainly been a contributing factor in the betterment of the conditions of living of the people.

While the analysis of the information collected from our selected villages has yielded positive results our analysis of the control villages lends support to the fact that an all-weather road facilitates the development process. In our control villages the average household incomes are lower than that of our selected villages. Its not that income levels over the past few years have not gone up but even then the gap between household incomes still persists. Meerut, however, was the only exception because the entire district is agriculturally prosperous and sugarcane is mainly grown even in our control villages. Moreover, as had been indicated most of the villages had been connected with some type of road even before the PMGSY scheme came into operation. Thus Meerut has seen more of upgradation of the already existing roads. Secondly, Fitkari, from among the control villages is particularly well off.

The respondents whom we surveyed along with the respondents of our control villages from the four districts have unanimously been of the opinion that they attach a very high priority to an all-weather road. They feel that once a proper road is constructed they will have much higher mobility than at present. This in turn will result in higher sales in distant markets fetching better prices. Consequently income levels will go up still further. Better roads will

make it much more convenient for the students in availing educational facilities. Likewise, taking patients for treatment outside the village to any health facility will become less troublesome and less time consuming. This will particularly prove a boon in case of critical cases where timely treatment is of utmost priority. A proper road will also cut down cost on repair and maintenance of their vehicles and on cost of fuel. Along with it the flow of traffic will also register an increase. Once the frequency of visits to other places outside the village increases the overall level of awareness among individuals will automatically go up as well. In short, therefore, we may say that these villages will start to enjoy all those advantages which people from the villages which have an all-weather road have already been gifted with.

If we look at the PMGSY scheme itself it was found that while the quality of road construction was very good in Gorakhpur and Meerut districts the same was not so in the other two districts viz. Rae Bareli and Jhansi. The guidelines which have to be followed in the course of road construction are explicitly laid down in the scheme. Proper survey has first to be conducted and people's participation is a primary condition so that people are taken into confidence regarding the connectivity which is to be provided. Once the detailed project report (DPR) is prepared, the area through which road is to be constructed has to be granted clearances by way of No Objection Certificates from concerned departments such as Forest Department and in case the road cuts into the fields of an individual, he has to voluntarily donate the land for road construction since there is no provision of any compensation to such individuals. Before construction soil tests are conducted to ascertain the California Bearing Ratio (CBR) and also estimates of current flow of traffic and projected traffic flow after 10 years is made. These aspects determine the thickness of the crust of the road so that it can bear the load of traffic. The road construction contract has a built in clause under which the contractor has to carry out routine maintenance of roads constructed by him for a period of 5 years. The amount to be spent is included in the overall cost of construction. Once the Detailed Project Reports are finalized they are duly approved first by the UPRRDA and then forwarded to NRRDA for overall clearance and clearance of funds.

Once the proposal is cleared and Technical Sanction accorded, the Executive Agency invites tenders which can only be submitted by Class A/B contractors. Every Class A/B Contractor has to have road rollers and other machinery as well as staff as laid down in the PMGSY guidelines. They are also expected to have a laboratory which may be set up at the project site. To ensure proper supervision and monitoring of roads being constructed under PMGSY a 3-tier provision has been made. This includes the PIU at the first-tier. The second-

tier is the State Quality Monitor (SQM) and the National Quality Monitor (NQM) constitutes the third-tier.

Despite the fact that all norms and regulations are specified and laid down in the guidelines, PIU officials are confronted with various problems. The most important draw back is the paucity of Class A and B contractors. The roads which are constructed under PMGSY are of varying lengths and some may be below 1 km while some might be 8-10 kms. The overall average length of roads covered by us was around 2-4 kms and this was so because we did not choose any road which was below 1.75 kms. If we look at the cost of construction then costs ranged from around Rs.35 lakh to around Rs.1 crore. The Class A contractors are not interested in undertaking such small projects and prefer to take up work orders which involves roads which are lengthy and generate higher profits. In Rae Bareli, the problem has been compounded because from among the listed Class A contractors many were blacklisted after one road constructed jointly by them was found to be of poor quality. In Jhansi it is found that although the work order is given to a registered Class A contractor he sub-lets the same to someone else. In the absence of sufficient Class A contractors the department then opts for those contractors who might not be having all the equipment and machinery as specified in the guidelines but they take the equipment on loan from other sources to fulfill the eligibility condition. Such contractors are also short of the prescribed staff. It is generally felt by people that roads constructs during Phase I were of better quality as compared to those constructed later. According to specifications laid down when a PMGSY road passes through any habitation proper drains have to be constructed since water logging can damage roads. But this clause is not strictly being followed in all cases.

Another factor affecting quality of road is the timing of road construction. In each financial year the district has a target which is to be achieved. The process of approval of DPR and sanction of funds for construction is time consuming and months may lapse in this process. At the time when road is being painted conditions of maximum heat are ideally suited. Unfortunately this is not always the case and in order to achieve targets roads are also completed in months when temperatures have dropped below the ideal level. In the case of such roads the top surface starts to show signs of wear and tear much earlier than anticipated because quality of construction, despite being done under norms, is adversely affected because of external factors.

The delays in approval of projects have another drawback. The cost escalation factor comes into play and the projected cost of construction which had been indicated at the time of

submitting the tender falls short because cost of inputs have gone up. In such cases also quality of construction suffers.

The villagers also feel that the quality is not upto the mark despite a three-tier quality control mechanism because the SQM and NQM team is shown only those roads where good quality construction work is being carried out.

One of the major drawbacks of the PMGSY scheme is that routine repairs and maintenance is not being done properly. In all our sample districts this was found. The officials have pointed out that the contractors move out of the construction site once the road construction work is over and either take up some other PMGSY assignment within the district or get involved in some other project. They, therefore, find it uneconomical to bring back their staff and equipment and machinery merely to take up routine repair works. This problem was particularly found in Rae Bareli and Jhansi where the contractors are influential persons and do not even reply to reminders which have been dispatched to them asking them to undertake repair work as per the work order.

The other factor which proves a deterrent is that the amount earmarked for routine repair and maintenance is a small percentage of the total cost of construction of a given road. This amount too is for the entire five year period. It is generally being felt that the amount is insufficient keeping in mind the fact that costs have been going up over the years.

The villagers also feel that the life of roads can be enhanced if along the sides of the road some brick soling work is also done at the time when the road is constructed. Presently the sides of all roads are kutcha and this causes wear and tear along the sides. This would have stopped if brick soling work had also been completed as part of the project.

In cases where a PMGSY road passes through another habitation then the distance along which houses are constructed is not metalled. Instead the road is made with cut stones. In one of the villages of Rae Bareli, the cut stone patch was extremely bad because the stones used were uneven and people felt that a kutcha road would have been a better option. On this road even riding a cycle is trouble-some. However, orders have been passed that in all future roads where cut stone is used the stones must be smoothened and set properly so that this problem is eliminated.

As indicted earlier, the procedure of project approval is time consuming. While it alters the cost structure another disadvantage which results is that another agency constructs the road in the interim period and since the strict norms used under PMGSY are not followed its quality is not good. Moreover, by the time sanction and money is received the efforts of PIU officials is

wasted. The targets also get affected as the road has to be dropped from the list of proposed roads.

Another problem which PIU officials face is when the road passes through the field of an individual. Every effort is made to ensure that the connecting road should be as straight as possible and have minimum curves. However, in some cases there so much pressure is exerted by influential persons to avoid the road cutting into their field that the road takes a detour. This adversely affects the plan and at times even the cost structure.

Delays in road construction even after receiving all clearance and sanction from NRRDA are found in cases where a government agency fails to provide a NOC. This is the case in one of our control villages in Jhansi which desperately is in need of an all-weather road as it is a very backward area. The project has also been approved under PMGSY but the forest department is not issuing the NOC.

## SUGGESTIONS

The procedure of clearing projects usually is time consuming and substantial time lapses from the point a DPR is prepared and till the project gets official sanction. In case these delays can be reduced to the minimum, since the procedure of clearance involves various steps, then the construction activity can be started on a timely basis and this might ensure that the painting of roads is undertaken during months of high temperatures as is ideal for this purpose.

Reduction in the time lapse before sanctioning of a project will also, to a certain extent at least, eliminate the problem of price escalation. However, since some prices do increase there should be a provision of meeting this increased cost of construction.

In case delays in clearance are reduced then it will also ensure that roads which have been approved for construction under PMGSY are duly completed also and do not have to be dropped from the original list. These delays lead to roads being constructed by any other agency.

Over the years since cost of construction has gone up the UPRRDA and SRRDA should also think in terms of revising their provisions so that price escalation factor is covered adequately.

The bad experience that PIU officials have had with contractors in Rae Bareli and Jhansi means that there is need to screen all Class A/B contractors properly before they are considered for the submission of tenders even. It is generally found that a district might not have sufficient

contractors to suit the demand of a PIU. In such cases the condition may be relaxed and a Class A/B contractor from the adjoining district may be invited for doing the job.

The general experience of PIU officials is that the contractors who do the construction work do not own all the machinery and equipment as per the guidelines. They make up the shortages by borrowing the same from other sources. Since work has to be completed as per the targets the officials grant the contracts to such contractors as well. But what is essential that they should keep conducting surprise checks of the different work sites to ensure that all contractors have the required machinery and equipment for the entire duration of road construction rather than borrow it temporarily at the time of initiation of a work order.

The PIU officials do not agree that the team members comprising the SQM or NQM are taken for inspection only to those roads which are being well constructed. However, it may not be a bad idea if these inspections are by way of surprise checks. The concerned PIU should have no knowledge of an inspection, as is the case at present. In this way the officials can reach the PIU uninformed and demand that they be shown roads selected by them.

The views of villagers and influential persons were that no matter how well a road is constructed there is no protection provided to the roads on either side. As they are village roads the sides are all mud and weather condition cuts into them both because of wind and rains. Thus, the sides of roads are left exposed once the kutchra portion is eroded and from the edges roads start getting damaged. Their suggestion is that the work order should also make provision for brick soling along both sides of the road constructed under PMGSY. Although this would entail higher total cost of construction but will provide greater longevity to the PMGSY roads.

A major problem area of the PMGSY scheme is repairs and maintenance of roads. This is a neglected area in each of our districts and the factors have also been identified. There is, therefore, need to do some rethinking on this aspect and desirable changes may be introduced to deal with the problem. In the first place the defaulters should be blacklisted and should be forbidden from even submitting tenders. Those who are working on any other PMGSY road should be asked to take up repair and maintenance immediately failing which their payments on the road under construction would be stopped.

The other option is to delete the repair and maintenance clause from the contract itself because of the inherent problems in this provision. Routine repair and maintenance work can be entrusted to other contractors and for such work one does not even require the services of a Class A/B contractor. The PIU officials will find it much more convenient handling these contractors as they will have to be selected as and when repair and maintenance is needed.

Just as there is need to take care of price escalation in the cost estimates of road construction, even the existing provisions made for carrying out routine repair and maintenance may be suitably revised.

Finally, the PIU officials have to perform various duties from the time of initial survey to preparation of DPR, invite tenders and then supervise road construction and then get repairs done. Their duties involve traveling to all the habitations where road construction work is in progress. For this the supervisory staff at their disposal is minimal. Moreover, a PIU generally has one vehicle which is in the charge of the PIU head. Each PIU feels the need for at least one more vehicle and this demand is quite genuine to ensure that officials are performing their duties in accordance with the needs of their job. It is therefore time for making the provision of an extra vehicle to every PIU. This will facilitate proper monitoring and supervision and regular checks and surprise visits will ensure that the quality of construction is maintained through out the district where roads under PMGSY are being constructed.

Since the PMGSY scheme is very beneficial and it has ensured proper connectivity over thousands of habitations in a short time it is only appropriate that the shortcomings of the scheme should be eliminated and this would ensure greater efficiency and better quality roads. Some of the suggestions outlined above may prove useful in achieving the desired results.

### Annexure 1

#### Analysis of Variance Test for Household Income in Sample and Control Villages

The major economic benefit of rural roads is in terms of increased income from agriculture and non agricultural sources. The difference in the increase in average household income in the sample villages and the controlled villages has been taken as a measure of economic benefit. It is therefore important to analyse whether the difference in average income in sample and control villages is statistically significant or not. This can be attempted with the help of analysis of variance. For this analysis we have used F test to find out whether variance is statistically significant or not.

The F test is used to find out whether the two independent estimates of population variance differ significantly, or whether the two samples may be regarded as drawn from the normal population having the same variance. The F test is defined as follows:

$$F = \frac{S_1^2}{S_2^2} \quad \text{where}$$

$$S_1^2 = \frac{\sum (X_1 - \bar{X}_1)^2}{n_1 - 1} \quad \text{and} \quad S_2^2 = \frac{\sum (X_2 - \bar{X}_2)^2}{n_2 - 1}$$

It should be noted that  $S_1^2$  is always the larger estimates of Variance i.e.  $S_1^2 > S_2^2$

The results of the variance test for different villages and districts are given below:

##### District Rae Bareli

Name of Village	F - Test
Gohanna	5.671
Kotwa Madaniya	4.891
Devpuri	5.120
Pilkha	6.891
Jagdishpur	4.772
Pastaur	4.671
Tera	5.220
Sabzi	4.581
<b>Rae Bareli</b>	<b>5.734</b>

All values are significant at 5% level

**District Gorakhpur**

Name of Village	F - Test
Chabella	4.871
Bhaksa	4.732
Pakadiyar	5.002
Sihata Mudera	4.921
Gadiana	5.129
Behusa	5.328
Sihorwa	4.981
Lonia	5.004
<b>Gorakhpur</b>	<b>5.001</b>

All values are significant at 5% level

**District Jhansi**

Name of Village	F - Test
Tilautha	6.387
Bachauni	5.436
Koltora	5.897
Shahpura	5.621
Gorpura	6.032
Ghanghori	5.923
Punauli	4.987
Dimrauni	5.012
<b>Jhansi</b>	<b>5.567</b>

All values are significant at 5% level

**District Meerut**

Name of Village	F - Test
Bhola	4.876
Alamgiripur	4.981
Bhamauri	4.723
Meerpur	5.067
Brahmpur	4.992
Manpuri	5.110
Nagla kaboolpur	4.888
Raidara	5.197
<b>Meerut</b>	<b>5.231</b>

All values are significant at 5% level

In case of all the 32 sample villages we find that the value of F test is statistically significant at 5% level. Therefore, it can be concluded that the mean income in the sample villages was significantly different from the mean income in the control villages.